CITY OF TITUSVILLE

CITY COUNCIL

AGENDA

Regular Meeting

March 10, 2026 - 6:30 PM

Council Chamber at City Hall

555 South Washington Avenue, Titusville, FL 32796

Any person who decides to appeal any decision of the City Council with respect to any matter considered at this meeting will need a record of the proceedings, and for such purpose, may need to ensure that a verbatim record of the proceedings is made, which record includes the testimony and evidence upon which the appeal is to be based.

Applicants for land use and zoning related items are advised that the resumes of staff members who prepare applicable staff reports are on file in the City Clerk's Office.

The City desires to accommodate persons with disabilities. Accordingly, any physically handicapped person, pursuant to Chapter 286.26 Florida Statutes, should, at least 48 hours prior to the meeting, submit a written request to the chairperson that the physically handicapped person desires to attend the meeting.

1. CALL TO ORDER

2. INVOCATION

A. **Invocation**

Pastor Jeremy Coppock from Faith Baptist Church will give the invocation.

3. PLEDGE OF ALLEGIANCE

4. APPROVAL OF MINUTES

A. **Minutes**

Approve the minutes of the regular City Council meetings on January 29, 2026 (6:30 p.m.), February 10, 2026, and February 24, 2026 (5:30 p.m.).

5. SPECIAL RECOGNITIONS & PRESENTATIONS

6. BOARDS AND COMMISSIONS

A. **Code Enforcement Special Magistrate**

The Code Enforcement Special Magistrate's semi-annual written report is included in the agenda packet. No action is requested.

B. **Planning and Zoning Commission**

Appoint four (4) regular members and one (1) alternate member to the Planning and Zoning Commission with terms to expire on January 31, 2028. **(This agenda item was tabled at the regular City Council meeting on January 29, 2026 at 6:30 p.m.)**

7. PETITIONS AND REQUESTS FROM THE PUBLIC PRESENT (NON-AGENDA ITEMS)

8. CONSENT AGENDA

A. **Student Advisory Council Scholarship Policy Expenditure**

Approve Titusville Student Advisory Council Scholarship Policy expenditure not to exceed $1,250 and direct staff to forward pending disbursement forms to the City Manager and Finance Department, for the preparation of two individual scholarship checks, as prescribed by the policy. Pending this request, the scholarships will be awarded at the regular City Council meeting on April 28, 2026 (6:30 p.m.).

B. **Contract with Edgewater Group LLC for Professional Engineering Design Services for Titusville Marina Hurricane Repair Project**

Execute Contract #CN26-Q-002/LR with Edgewater Group for Professional Engineering Services in the amount not to exceed $152,410.00 for the City Marina Hurricane Repair Project and authorize the Mayor to execute the contract following review and approval by the City Attorney, City Manager, and Purchasing and Contracting Administrator. Additionally, approve the associated budget amendment.

C. **Property Donation of Lot 5 Block 45 of Sun Valley Subdivision**

Accept the donation of the property identified as Parcel ID No.: 22-35-28-01-45-5, Legal Description: Sun Valley Subdivision Lot 5 Block 45.

D. **Space Coast Health Foundation Grant to purchase the Handtevy Pediatric System from Pediatric Emergency Standards, Inc.**

Accept grant funding from the Space Coast Health Foundation to support the first year of the program and approve the three-year price lock agreement with Pediatric Emergency Standards, Inc. for the purchase and implementation of the Handtevy Pediatric System, and approve a budget amendment to appropriate the grant funds and related expenditures: (1) Authorize the City Manager to execute the grant funding agreement from the Space Coast Health Foundation for the first year in the amount of $13,541, which includes the Learning Kit and Mobile App; (2) Authorize the city manager to execute the three-year price lock agreement with Pediatric Emergency Standards, Inc. for the Handtevy Pediatric System in the total amount of $28,128.85 for three years; and (3) Approve a budget amendment to appropriate the grant funds and associated expenditures.

E. **Brackish Source Water Feasibility Study**

Award Task Order CDMTO003 to CDM Smith, Inc., in the amount of $96,290 to provide engineering consulting services for a feasibility study for a brackish water source, and authorize the Mayor to execute the Task Order. Additionally, approve the associated Budget Amendment.

F. **Limited Bidding and Construction Services for Blue Heron Filter Project**

Award Task Order # TOMH006 to Mead and Hunt in the amount of $90,259 to provide engineering consulting services including, but not limited to, providing bidding services and limited construction services for the Blue Heron Filter project, and authorize the Mayor to execute the Task Order.

G. **Task Order WPTO004 for Knox McRae Master Pump Station Project for Bidding and Construction Services**

Award Task Order WPTO004 to Wright-Pierce, Inc, in the amount of $135,300 to provide engineering consulting services including, but not limited to, providing bidding services and limited construction services for the Knox McRae Master Pump Station project, and authorize the Mayor to execute the Task Order.

H. **First Amendment to Tender and Release Agreement**

Approve the first amendment to the tender and release agreement for the Indian River force main project and allow the Mayor to execute the amendment.

9. ORDINANCES – SECOND READING, PUBLIC HEARING AND RELATED ACTION

THE FOLLOWING ITEMS ARE SUBJECT TO QUASI-JUDICIAL RULES OF PROCEDURE. ANYONE WISHING TO SPEAK ON AN ITEM MUST FIRST COMPLETE AN AGENDA SIGN-UP CARD AND SIGN THE OATH CONTAINED THEREON. THOSE SPEAKING IN FAVOR OF A REQUEST WILL BE HEARD FIRST. IF YOU HAVE PHOTOGRAPHS, SKETCHES, OR DOCUMENTS THAT YOU DESIRE FOR CITY COUNCIL TO CONSIDER, THEY MUST BE SUBMITTED INTO EVIDENCE AND WILL BE RETAINED BY THE CITY. SUBMIT THESE EXHIBITS TO THE CITY CLERK.

A. **Conditional Use Permit (CUP) Application No. 9-2024 Titusville Storage**

Consider Conditional Use Permit Application No. 9-2024 to allow a mini-warehouse use at property identified by Brevard County Parcel ID No. 22-35-26-00-504.1, located west of US Highway 1 and south of State Road 50, currently designated with the M-1 zoning district.

On March 4, 2026, the Planning and Zoning Commission recommended approval as presented, 5-1. One member voted no because he thought there are too many storage facilities in Titusville and the City should stop and evaluate what is being allowed in the City.

10. ORDINANCES - FIRST READING

11. OLD BUSINESS

A. **Contract for Bayview/Seminole Lift Stations Project**

Award Contract for Bid CN26-B-004/LR to AMCON Development Group LLC of Winter Springs, FL for the replacement of Seminole Lift Station and Demolition of Bayview Lift Station in the amount of $4,135,774.83 and authorize the Mayor to execute the Contract.

B. **Discussion — City Internal Auditor**

Discussion - City Internal Auditor. (At their regular City Council meeting on February 10, 2026, the City Council postponed this agenda item to this meeting.)

C. **Health Benefits Consultant RFP Solicitation**

Approve Benefits Consultant RFP solicitation.

12. NEW BUSINESS

13. PETITIONS AND REQUESTS FROM THE PUBLIC PRESENT (NON-AGENDA ITEMS)

14. MAYOR AND COUNCIL REPORTS

A. **Mayor's Report**

The Mayor will provide his individual report.

B. **Council Reports**

Council Members will provide their individual reports.

15. CITY MANAGER’S REPORT

A. **City Manager's Report**

The City Manager's Report is included in the agenda packet.

16. CITY ATTORNEY’S REPORT

City of Titusville

"Gateway to Nature and Space"

REPORT

To: Members of the City Council

From: Thomas Abbate, City Manager

Subject: **Minutes**

Department/Office: City Clerk

Recommended Action:
Approve the minutes of the regular City Council meetings on January 29, 2026 (6:30 p.m.), February 10, 2026, and February 24, 2026 (5:30 p.m.).

Summary Explanation & Background:

Alternatives:

Item Budgeted:

Source/Use of Funds/Budget Book Page:

Strategic Plan:

Strategic Plan Impact:

ATTACHMENTS:
1. Draft Minutes - January 29, 2026 (6:30 p.m.)
2. Draft Minutes - February 10, 2026
3. Draft Minutes - February 24, 2026 (530 p.m.)

City Council
Regular Meeting
January 29, 2026

The City Council of the City of Titusville, Florida met in regular session in the Council Chamber of City Hall, 555 South Washington Avenue, on Thursday, January 29, 2026. Mayor Connors called the City Council meeting to order at 7:00 p.m., not 6:30 p.m., due to the Regular City Council meeting for *Special Recognitions and Presentations* at 5:30 p.m. ran late.

Present were Mayor Andrew Connors, Vice-Mayor Herman A. Cole, Jr., Col USAF Retired, and City Council Members Jo Lynn Nelson, Megan Moscoso, and Dr. Sarah Stoeckel. Also present were City Manager Thomas Abbate, City Attorney Andriene Treasure, and City Clerk Wanda Wells.

Pre-recorded procedures for public comment, participation, and orderly conduct were played for all individuals that were in attendance or watching the meeting. Mayor Connors requested a moment of silence. He then led those present in the *Pledge of Allegiance to the Flag*.

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Mayor Connors requested Council take formal action to have the City's Internal Auditor report to the City Council. He also desired lowering spending limits on employees' purchase cards. Member Moscoso supported these concepts. She previously expressed other concerns to City Manager Abbate and requested he research issues, when people gave Council information on various concerns. Member Nelson supported the concept and recommended scheduling an item on an upcoming City Council agenda, to allow more time to collect and formulate information, ideas, next steps, etc. Additionally, Mayor Connors desired having an asset manager to track all City assets.

Vice-Mayor Cole supported having the Internal Auditor report to City Council. He advised that in every organization that he had ever been a part of, from the military, university, and serving on the hospital board, the Internal Auditors of those organizations "reported up". Member Stoeckel agreed.

Motion:
Vice-Mayor Cole moved that the Internal Auditor of the City of Titusville, when the audit was completed, to report the findings to the City Council.

Member Nelson offered a friendly amendment to the motion. Instead, she recommended scheduling the concept as an item on the next or an upcoming Council meeting agenda, along with whatever other recommendations the City Manager may come up with, to allow or provide the Council more oversight.

Vice-Mayor Cole withdrew his motion.

Member Moscoso agreed with Member Nelson, recalling that Council previously agreed they would not take formal action on items not listed on the published City Council meeting agenda.

Mayor Connors desired including an item on the next City Council meeting agenda on the internal audit, reporting, and discussion, and to receive the Internal Auditor's recommendations on what different safeguards the City could put into place to help protect taxpayers. Member Stoeckel supported this idea, properly noticing the public in advance of the next Council meeting, along with the time sensitivity of the concern, Councilmembers were doing everything they could and were not allowed to talk to each other outside of Council meetings, there was an indication the City's *Charter* already provided for these procedures, etc.

During the discussion and prior to the motion, Council stated that the City's *Charter* read that the City Council appointed the City's Auditor.

Motion:
Member Moscoso moved for staff to add an agenda item for the City's Internal Auditor to come before the City Council to have a discussion (indicated would be scheduled for the next Regular City Council meeting). Member Nelson seconded the motion.

Mayor Connors requested hearing from any citizens and public that desired speaking on the proposition.

Stan Johnston supported Mayor Connors' suggestion and the present motion on the floor.

Elizabeth Baker commented on concerns for corruption, a related event or concerns indicated from 2010, whether a prior department head was working for a firm doing business with the City, etc.

There was no additional discussion and the roll call vote was:

Member Moscoso	Yes
Member Nelson	Yes
Mayor Connors	Yes
Vice-Mayor Cole	Yes
Member Stoeckel	Yes

The motion carried unanimously.

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City Manager advised that Public Hearing Agenda Item 9 C - *Small Scale Amendment (SSA) Application No. 5-2025 Sunset Development 125 Precision Way with Annexation* was withdrawn from the Council agenda at the request of the applicant. There was no objection from Council.

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MINUTES – None.

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SPECIAL RECOGNITIONS & PRESENTATIONS – None.

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BOARDS AND COMMISSIONS

Historic Preservation Board – No action was requested. Historic Preservation Board (HPB) Member Toni Shifalo presented the Historic Preservation Board's semi-annual report.

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Planning and Zoning Commission – No action was requested. The Planning and Zoning Commission's semi-annual written report was included in the Council agenda packet.

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Planning and Zoning Commission – City Manager Abbate highlighted the request as outlined in the Council agenda packet. The request was to appoint five (5) regular members and one (1) alternate member to the Planning and Zoning Commission (P&Z), with terms to expire on January 31, 2028.

The terms of Regular Members Theodore Garrod, Christopher Childs, Janay Gelin, Romie Grant, Erron Fayson, and Alternate Member James Troutman were due to expire on January 31, 2026; however, there was a clerical error for the term expiration date of Regular Member Erron Fayson. Regular P&Z Member Erron Fayson's term should have expired or renewed by or before January 31, 2025 (one year ago). To correct this error, City Manager Abbate recommended that Council reappoint Mr. Fayson for the remainder of a two-year term and would expire on January 31, 2027, not January 31, 2028.

As outlined in the Council agenda, Regular Members Garrod, Childs, Gelin, and Fayson desired to continue serving as regular members.

Romie Grant did not wish to be reappointed.

Alternate Member Troutman desired serving as a regular member.

An additional application from Stan Johnston was on file. He desired serving as a regular or an alternate member.

Mayor Connors requested hearing from all interested individuals.

Stan Johnston (applicant) expressed concerns of environmental sustainability, drainage and flooding, reporting his concerns to the Federal Emergency Management Agency (FEMA), records he advised were related to 1989 flood zone areas, etc.

Christopher Childs (incumbent) read from a prepared statement that discussed why Council should reappoint him as a regular member, the importance of reappointing members to provide continuity and stability on matters concerning long term planning, his serving honorably in his role, his having healthy disagreement or differing viewpoints were not disloyalty, but participation, etc.

James Troutman (incumbent) presently served as an alternate member. He briefly reviewed his responsibilities at his job, skills, adhering to strict standards and policies required by his job, his desire to serve on P&Z as a regular member, etc.

Council discussion ensued on the following:

- Few applications were submitted for the aforementioned positions
- Whether Council should defer making a decision for one month to obtain additional applications. One Councilmember critiqued this concept was arbitrary
- Honoring and thanking those presently serving and why Council would defer or postpone reappointing current members
- Time was required to learn the scope and information needed to fill the role or expectations of serving as a P&Z member
- The scrivener error that unintentionally caused five (5) regular members to be proposed for appointment at this meeting, versus four (4) regular members
- On advertising or communication with the public on upcoming appointments and vacancies, a routine, monthly, statement was published and disseminated via several media outlets to alert or notify the public of appointments coming due for the next six (6) months
- On advertising appointments, keeping the Council informed on upcoming appointments or notifying them two months prior to when board and commission appointments were expiring
- Giving citizens the opportunity to apply to serve on the P&Z and the City's boards and commissions
- Ensuring social media was used to advertise upcoming board appointments, vacancies, etc. It was important to push out and advertise information to the citizens

Motion:
Member Moscoso moved to reappoint Theodore Garrod, Christopher Childs, Janay Gelin, and Erron Fayson as regular members on the Planning and Zoning Commission for terms to expire on January 31, 2028, with the exception of Erron Fayson, whose term would expire on January 31, 2027. The motion also included appointing Alternate Member James Troutman as regular member on the Planning and Zoning Commission with a term to expire on January 31, 2028.

The motion died for a lack of a second.

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Motion:
Member Nelson moved to table the requested appointments of regular members and an alternate member on the Planning and Zoning Commission (P&Z) to the Regular City Council meeting of March 10, 2026, at 6:30 p.m. The motion also included authorizing the incumbents to continue serving on the P&Z, until the Regular City Council meeting of March 10, 2026. Member Stoeckel seconded the motion.

City Clerk Wells asked whether Council wanted to address the scrivener error and reappoint P&Z Regular Member Erron Fayson at this time.

Amended Motion:
Member Nelson moved to amend the motion on the floor and table the appointments of four (4) Regular Members and one (1) Alternate Member on the Planning and Zoning Commission (P&Z) with terms expiring on *January 31, 2028*, to the Regular City Council meeting of March 10, 2026, at 6:30 p.m. The amended motion also included authorizing the incumbents, including Regular Members Theodore Garrod, Christopher Childs, Janay Gelin, and Romie Grant, and Alternate Member James Troutman to continue serving on the P&Z, until the Regular City Council meeting of March 10, 2026. Member Stoeckel's second held and the roll call vote was:

Member Nelson	Yes
Mayor Connors	Yes
Vice-Mayor Cole	Yes
Member Stoeckel	Yes
Member Moscoso	No

The motion carried, 4-yes to 1-no.

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Motion:
Member Nelson moved to reappoint Erron Fayson as a Regular Member of the Planning and Zoning Commission for a term to expire on January 31, 2027, not January 31, 2028 (correcting the scrivener's error discussed earlier in the meeting). Vice-Mayor Cole seconded the motion.

Member Moscoso desired tabling Mr. Fayson's appointment in fairness, along with the other appointments. Brief discussion ensued with the rationale for reappointing Mr. Fayson and to correct the expiration date for his seat on the P&Z. The roll call vote was:

Mayor Connors	Yes
Vice-Mayor Cole	Yes
Member Stoeckel	Yes
Member Moscoso	Yes
Member Nelson	Yes

The motion carried unanimously.

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Titusville Environmental Commission TEC) - No action was requested. TEC Member Jason Miller presented the Titusville Environmental Commission's semi-annual report.

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Titusville Flag and Memorial Committee **-** The Committee's annual written report was included in the Council agenda packet.

Next, one action was requested, which was to affirm the appointment of the Committee's members as stipulated in the Committee's governing resolution (formerly Resolution No. 13-2016, but which was superseded and updated by Resolution No. 6-2025).

Motion:
Member Nelson moved to affirm the appointment of Committee members and election of officers on the Titusville Flag and Memorial Committee, as provided in the Committee's written, annual report. Vice-Mayor Cole seconded the motion and the roll call vote was:

Vice-Mayor Cole	Yes
Member Stoeckel	Yes
Member Moscoso	Yes
Member Nelson	Yes
Mayor Connors	Yes

The motion carried unanimously.

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Titusville Social Services Ad Hoc Committee – The request was to appoint members to the Titusville Social Services Ad Hoc Committee.

The report included in the Council agenda packet advised that on September 23, 2025, City Council approved the *Guidelines* and application to establish a Titusville Social Services Ad Hoc committee, and authorized staff to open the application cycle. The Ad Hoc Committee application cycle was advertised on the City's website, the Neighborhood Services website and Facebook (social media) pages, and outreach through email correspondence were sent out to various citizen groups and service agencies. Additionally, Mayor Connors had provided a *Mayor's Minute* update about the Committee. The application deadline was initially on November 15, 2025; however, due to an inadequate number of applications, the application period was extended to December 31, 2025. During the application period, the City Clerk's office received ten (10) applications from residents and non-residents. An additional application was forwarded on January 28, 2026, which presented a total of eleven (11) applicants.

Next, a summary of the *Titusville Social Services Ad Hoc Committee Guidelines*, included:

- Meetings would be for a minimum period of six months and would be held at the Harry T. Moore Social Service Center.
- The Committee shall consist of at least five (5) members from the pool of applications received. The committee shall not exceed seven (7) members.
- The Committee composition shall consist of a majority of social service users.
- The Committee members shall reside within the City limits of Titusville; and
- At least three (3) members shall reside within one of the service target areas.

Applicants seeking appointments to the Titusville Social Services Ad Hoc Committee included: Gina Beckles, Kimberly Brooks*, Cynthia Dennison*, Nancy Oliver, Reva Watson*, Pierre Zidor*, William Gary, Susan Pender*, Christina Stokes, and Monifa Watson. The * symbol indicated applicants with residency within one of the target area neighborhoods.

An excerpt from *Titusville Code of Ordinances, Article III. – Boards, Committees, Commissions, Section 2-51. – Appointments; removal*, was also outlined in the Council agenda packet.

The report also indicated appointments were to be confirmed by City Council. The Titusville Social Services Ad Hoc Committee would follow the same rules applied to other Boards and Commissions with regard to the *Florida Statutes Sunshine Law*, once formed. Additionally, it was anticipated that the Ad Hoc Committee would convene its work in March 2026.

To the above, Mayor Connors requested hearing from any applicants and public that desired speaking on the request.

Toni Shifalo indicated support for appointing only residents of the target area neighborhoods, for reasons she explained.

Erica Davis (applicant) desired serving on the Ad Hoc Committee. She discussed her background, professional contributions while working for public agencies, and her family's experience with public service.

Lynn Golden (applicant), President of the Concerned Citizens Group, discussed why she supported and recommended Council appointment of three individuals including Reva Watson, Susan Pender, and Erica Davis.

Susan Pender (applicant) advised she was a resident of one of the target areas. She read from a prepared statement that discussed why she desired serving on the Titusville Social Services Ad Hoc Committee.

Reva M. Johnson Watson (applicant) discussed why she desired serving on the Ad Hoc Committee, her desire to make the Harry T. Moore Social Services building available to the community "after-hours", etc.

Dr. Gina Beckles (applicant) was a long-term resident. She discussed her education, experience working in public service, and filling the gaps and needs of services desired in the community.

Stan Johnston waived his right to speak.

Kimberly Brooks (applicant) commented on her desire to serve on the Ad Hoc Committee, her employment related to helping others, passion for helping others every day, learning, and her desire to serve her community.

Cynthia Dennison (applicant) discussed being a resident of a target area, her background and professional contributions working for public or non-profit agencies, the scope of her professional duties ad desire to use her knowledge on the Committee, each applicant was impressive, etc.

Nancy Oliver (applicant) was not present.

Pierre Zidor (applicant) highlighted his education, current employment in public education, prior work experience, current educational pursuits, why he desired serving on the Ad Hoc Committee, etc.

William Gary (applicant) highlighted his history and involvement with the Harry T. Moore Center and his background and experience, which would lend itself to the purpose of the Committee.

Christina Stokes (applicant) read from a prepared statement that highlighted her education and fields of study, including psychology and criminology, she was a published research author, her involvement in community advocacy and public service, why she desired serving on the Ad Hoc Committee, etc.

Monifa Watson (applicant) read from a prepared statement that discussed she was the Executive Director of North Brevard Charities, the purpose of her organization and its role with assisting a target area, her education, experience in social services, addressing the community's needs, etc.

Council discussion ensued on:

- Two Councilmembers voiced their desire to appoint applicants that lived in the target areas
- Whether or not Council should rank the applicants. Each applicant was well qualified
- An idea to appoint all eleven (11) applicants, rather than limiting the committee to seven (7) members
- Getting the City Attorney's advices on whether City Council was bound by the guidelines that indicated the Committee would consist of a total of seven members
- An idea for City Council to amend the Committee's *Guidelines*

Motion:
Vice-Mayor Cole moved to amend the *Titusville Social Services Ad Hoc Committee Guidelines* to allow the appointment of all eleven (11) applicants. Member Moscoso seconded the motion.

Member Nelson reviewed the terms of the current *Ad Hoc Committee Guidelines*. If Council desired modifying the terms, this would require scheduling an item on an upcoming Council meeting. Staff advised there were other criteria that would have to be addressed as well.

Vice-Mayor Cole indicated that he wished to withdraw the motion on the floor. Member Moscoso did not object.

New Motion:
Member Nelson moved to amend the *Titusville Social Services Ad Hoc Committee Guidelines* to allow the appointment of all eleven (11) applicants, as followed: Gina Beckles, Kimberly Brooks, Cynthia Dennison, Nancy Oliver, Reva Watson, Pierre Zidor, William Gary, Susan Pinder, Christina Stokes, Monifa Watson, and Erica Davis as members to the Titusville Social Service Ad Hoc Committee. Vice-Mayor Cole seconded the motion.

The amendments would be brought back at the next regular City Council meeting on February 10, 2026, at 6:30 p.m. The roll call vote was:

Member Stoeckel	Yes
Member Moscoso	Yes
Member Nelson	Yes
Mayor Connors	Yes
Vice-Mayor Cole	Yes

The motion carried unanimously.

In addition, Mayor Connors advised that the Mayor was charged with making the appointment of the Chairperson. To this, he appointed Gina Beckles as the Chairperson of the Titusville Social Services Ad Hoc Committee. Ms. Beckles was present and agreed to the appointment.

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Member Nelson desired allowing an attorney attending the meeting that represented Agenda Item No. 9 D. - *Conditional Use Permit (CUP)Application No. 9-2025* to make a request to continue the hearing for the agenda item to a future meeting. City Attorney Treasure advised this would require reading and reviewing the *Quasi-judicial Rules of Procedures* aloud, which she completed prior to any further action.

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Modification to City Council agenda -

Public Hearing Agenda Item 9 D. - Conditional Use Permit (CUP) Application No. 9-2025

Kim Rezanka, an attorney on behalf of *Conditional Use Permit (CUP) Application No. 9-2025*, commented on her client's desire to continue the hearing for this agenda item to the regular City Council meeting on February 24, 2026, at 6:30 p.m.

Member Stoeckel and City Attorney Treasure briefly discussed that by continuing the hearing to a date and time certain, re-advertising this CUP application was not necessary.

Three (3) public speaking and oath cards were submitted on the agenda item.

Kay St. Onge, Laurilee Thompson, and Jill Dobson waived their individual rights to speak. When called upon, each indicated their desire to wait and express their viewpoints at the requested continuation meeting on February 24, 2026, at 6:30 p.m.

Motion:
Member Nelson moved to continue *Conditional Use Permit (CUP) Application No. 9-2025, Parcel ID # 21-35-28-00-279* to the regular City Council meeting on February 24, 2026, at 6:30 p.m. Vice-Mayor Cole seconded the motion and the roll call vote was:

Member Nelson	Yes
Mayor Connors	Yes
Vice-Mayor Cole	Yes
Member Stoeckel	Yes
Member Moscoso	Yes

The motion carried unanimously.

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PETITIONS AND REQUESTS FROM THE PUBLIC PRESENT (NON-AGENDA ITEMS)

Greg Val Dyke commented on living in his home located in the historical Indian River City Neighborhood (IRCN) for the last 45-years. The IRCN was located within a boundary between U.S. Highway 1 and Hopkins Avenue. His request was for the City to address the increasing amount of commercial traffic in the historical residential neighborhood. Mr. Val Dyke further commented on traffic patterns and reiterated his request.

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Stan Johnston commented on encouraging homeowners to contact the City to report their concerns on flooding, how flooding may affect property owners, etc.

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Melinda Villain distributed information. She read from a prepared statement that discussed her concerns on commercial uses on Acorn Drive and commercial zoning areas in the Indian River City Neighborhood (IRCN), which she felt was more like mixed-uses, which did not mean it was a “free-for-all” for commercial activities in the area. Ms. Villain felt that Acorn Drive had become a *de facto* commercial street, which violated the IRCN (neighborhood) plan, as well as a corridor master plan, etc.

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Glen Keller advised that he planned to submit a permit to build a 30’ x 30’ shop on his property, to offset theft at his property. He understood he may need to submit a variance application that

would go before the Board of Adjustments and Appeals to achieve his goals. Additionally, he advised that his home was approximately 800 square feet in size.

Member Stoeckel requested staff weigh-in, to which staff advised that a variance request was an option. Other options could be evaluated. There was a policy limitation on the size of an accessory structure, in relationship to the size of the principal dwelling, in most zoning districts.

Mr. Keller advised that he owned ¾ of an acre and there should be plenty of room for his shop. He also commented on a concept of attaching the shop to his home.

Member Stoeckel advised that the Board of Adjustments and Appeals would hear the matter and their decision was binding. The matter would not come before City Council.

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Stel Bailey read from a prepared statement. She felt the City government was broken, due to years of silence and protection, employing the wrong people, and delaying or denial of things she felt were wrong. Ms. Bailey expanded and discussed her personal viewpoints to support, including Council appointing a current employee to the City Manager position, allegations for theft in one department, forcing good employees to work in underpaid and toxic work environments, allowing resignations when an employee was facing misconduct charges, cronyism, etc.

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CONSENT AGENDA

City Manager Abbate read Consent Agenda Item Nos. A, B, C, and D, as followed:

A. 2025-2026 Annual Disbursement Agreement between Brevard County Commissioners and the City for the HOME Grant Program - Approve execution of FY26 HOME Disbursement Agreement with Brevard County.

B. Emergency Purchase Orders - Synagro South LLC and GSM Engineered Fabrics LLC - Approve the emergency purchase order issued to Synagro South LLC in the amount of $86,354.78 for the emergency sludge dewatering, hauling and disposal and GSM Engineered Fabrics LLC in the amount of $28,345.29 to repair the belt press at the Osprey Water Reclamation Facility. Also, authorize the addition of GSM Engineered Fabrics to the City's vendor of record for as-needed belt purchases and repairs.

C. Purchase of Fire Department Tools and Equipment - Approve purchase of firefighting tools and equipment for a total price not to exceed $50,000.

D. Award of Contract for Bayview/Seminole Project - Approve the award of a Contract for Bid CN26-B-004/LR to AMCON Development Group LLC of Winter Springs, FL for the replacement of Seminole Lift Station and Demolition of Bayview Lift Station in the amount of $4,135,774.83 and authorize the Mayor to execute the Contract.

Cathy Pringle submitted a public speaking card on Consent Agenda Item 8D, to which she indicated being neutral on the request; however, her property was adjacent to the project. She requested the City delay the project until a relevant property boundary survey dispute was settled. She also requested that once this City project was complete, that a fence or screening be installed that complemented the appearance of her residential and historic area.

Will Pringle submitted a public speaking card on Consent Agena Item 8D, to which he indicated being neutral on the request; however, his property was adjacent to the project and some of the City's equipment overlapped and was located on his property, as shown on a drawing and pictures he distributed, which was provided to him earlier in the day by a professional land surveyor he hired to survey his property lines.

Mr. Pringle advised that he was not necessarily opposed to the City installing the project equipment partially overlapping on his property, only he felt it was important to clarify several questions, such as making improvements on property without clear property ownership, right-of-way or easement authority questions, and how or whether the construction of the infrastructure would have a permanent impact on his property value. For these reasons, Mr. Pringle requested Council direct staff to meet with him to answer such questions, before any more construction occurred.

Scott Cutter submitted a public speaking card on Consent Agenda Item 8D, to which he did not indicate whether he was for, against, or neutral. His property was adjacent to the Pringle's property. His concern was that the City was making infrastructure upgrades, but not being good stewards of information. Mr. Cutter advised that he and his neighbors were promised a couple of times that informational meetings would be held, but had not yet occurred.

Motion:
Member Nelson moved to pull Consent Agenda Item No. 8D for further discussion. Vice-Mayor Cole seconded the motion and it carried unanimously.

Motion:
Member Nelson moved to approve Consent Agenda Item Nos. A, B, and C, in accordance with the recommendations. Vice-Mayor Cole seconded the motion and the roll call vote was:

Mayor Connors	Yes
Vice-Mayor Cole	Yes
Member Stoeckel	Yes
Member Moscoso	Yes
Member Nelson	Yes

The motion carried unanimously.

xxx

Consent Agenda Item 8D -

D. Award of Contract for Bayview/Seminole Project - Approve the award of a Contract for Bid CN26-B-004/LR to AMCON Development Group LLC of Winter Springs, FL for the replacement of Seminole Lift Station and Demolition of Bayview Lift Station in the amount of $4,135,774.83 and authorize the Mayor to execute the Contract.

Mayor Connors asked staff whether they had any information indicating the project encroached on the adjacent property. Public Works Director Sandra Reller advised staff would need to complete a review of the concern. The project was tied to grant funding and it was time sensitive. Also, since Mr. Pringle advised that his land surveyor only completed and delivered the land survey of the Pringle's property line(s) earlier in the day, City staff would need to review all of the documentation, City Engineers would need to look at the right-of-way, etc.

Member Stoeckel desired tabling the request. She confirmed tabling the agenda item by two weeks left enough time to meet the grant funding timeline requirements.

Motion:
Member Nelson moved to table the proposed *Award of Contract for Bayview/Seminole Project (Consent Agenda Item No. D)* to the regular City Council meeting on February 10, 2026, at 6:30 p.m. This would allow staff to have further discussions (survey completed by property owner, fence, etc.) with the property owners (Will and Cathy Pringle) that reside near this project. Vice-Mayor Cole seconded the motion.

Member Moscoso and staff discussed whether there was enough project funding to install the requested fence or screening requested by Cathy Pringle.

The motion carried unanimously.

xxx

ORDINANCES – SECOND READING, PUBLIC HEARING AND RELATED ACTION

Ordinance No. 1-2026 Amending Chapter 15 Pensions and Retirement, Article III Police Officers' and Firefighters' Pension Plan – The request was to conduct the Second Reading and the Public Hearing of Ordinance No. 1-2026.

Human Resources Director Joe Denaro read Ordinance No. 1-2026 – AN ORDINANCE OF THE CITY OF TITUSVILLE AMENDING CHAPTER 15, PENSIONS AND RETIREMENT, ARTICLE III, POLICE OFFICERS' AND FIREFIGHTERS' PENSION PLAN, OF THE CODE OF ORDINANCES OF THE CITY OF TITUSVILLE; AMENDING SECTION 15-222 BENEFITS EFFECTIVE JUNE 30, 2013, SUBSECTION (E), SALARY, PROVIDING FOR A CHANGE IN THE TYPES OF INCENTIVE PAY PURSUANT TO THE COLLECTIVE BARGAINING AGREEMENT; AMENDING SECTION 15-233 DEFERRED RETIREMENT OPTION PLAN; REPEALING ALL ORDINANCES IN CONFLICT HEREWITH; PROVIDING FOR SEVERABILITY OF PROVISIONS AND PROVIDING AN EFFECTIVE DATE, for the second time by title only.

Mayor Connors opened the public hearing. As there were no individuals that wished to speak, the public hearing was closed.

Motion:
Member Nelson moved to approve Ordinance No. 1-2026, as recommended. Vice-Mayor Cole seconded the motion and the roll call vote was:

Vice-Mayor Cole	Yes
Member Stoeckel	Yes
Member Moscoso	(Not present during vote)
Member Nelson	Yes
Mayor Connors	Yes

The motion carried unanimously.

xxx

Ordinance No. 2-2026 Amending Chapter 15, Pensions and Retirement, Article II, General Employees' Pension Plan - The request was to conduct the Second Reading and the Public Hearing of Ordinance No. 2-2026.

Human Resources Director Joe Denaro read Ordinance No. 2-2026 - AN ORDINANCE OF THE CITY OF TITUSVILLE, FLORIDA, AMENDING CHAPTER 15, PENSIONS AND RETIREMENT, ARTICLE II, GENERAL EMPLOYEES' PENSION PLAN, OF THE CODE OF ORDINANCES OF THE CITY OF TITUSVILLE; AMENDING DIVISION 5, SECTION 15-110, DEFERRED RETIREMENT OPTION PLAN; PROVIDING FOR REPEALING ALL ORDINANCES IN CONFLICT HEREWITH; PROVIDING FOR SEVERABILITY OF PROVISIONS AND PROVIDING AN EFFECTIVE DATE, for the second time by title only.

Mayor Connors opened the public hearing. As there were no individuals that wished to speak, the public hearing was closed.

Motion:
Member Nelson moved to approve Ordinance No. 2-2026, as recommended. Vice-Mayor Cole seconded the motion and the roll call vote was:

Member Stoeckel	Yes
Member Moscoso	(Not present during vote)
Member Nelson	Yes
Mayor Connors	Yes
Vice-Mayor Cole	Yes

The motion carried unanimously.

xxx

Small Scale Amendment (SSA) Application No. 5-2025 Sunset Development 125 Precision Way with Annexation – This item was withdrawn from the agenda earlier in the meeting at the request of the applicant.

xxx

Conditional Use Permit (CUP) Application No. 9-2025, Parcel ID # 21-35-28-00-279 –Council continued this item earlier in the meeting to the regular City Council meeting on February 24, 2026, at 6:30 p.m.

xxx

ORDINANCES - FIRST READING

Ordinance No. 3-2026 - Annual update of the 5-Year Capital Improvements Schedule (2026-2030) relating to the Capital Improvement Element of the Comprehensive Plan - Community Development Director Brad Parrish read *Ordinance No. 3-2026* - AN ORDINANCE OF THE CITY OF TITUSVILLE, FLORIDA, UPDATING THE FIVE-YEAR CAPITAL IMPROVEMENTS SCHEDULE OF THE COMPREHENSIVE PLAN OF THE CITY OF TITUSVILLE FOR THE 2026 – 2030 HORIZON RELATING TO THE CAPITAL IMPROVEMENT ELEMENT; AND PROVIDING FOR AN EFFECTIVE DATE, for the first time and by title only.

The public hearing on Ordinance No. 3-2026 was scheduled for the regular City Council meeting on February 10, 2026, at 6:30 p.m.

xxx

Small Scale Amendment (SSA) Application No. 7-2025 - 1400 Elizabeth Avenue - Community Development Director Parrish read the following ordinances for the first time by title only, as followed:

Ordinance No. 4-2026 - AN ORDINANCE OF THE CITY OF TITUSVILLE, FLORIDA, AMENDING THE CODE OF ORDINANCES BY AMENDING ORDINANCE NO. 60-1988, WHICH ADOPTED THE COMPREHENSIVE PLAN OF THE CITY OF TITUSVILLE, BY AMENDING THE FUTURE LAND USE DESIGNATION ON LAND LOCATED AT THE NORTHWEST CORNER OF ELIZABETH AVENUE AND QUEEN STREET FROM LOW DENSITY RESIDENTIAL TO HIGH DENSITY RESIDENTIAL ON 3.61+/- ACRES OF PROPERTY HAVING PARCEL ID NO. 22-35-09-02-*-7; PROVIDING FOR SEVERABILITY; REPEAL OF CONFLICTING ORDINANCES; AND PROVIDING FOR AN EFFECTIVE DATE.

Ordinance No. 5-2026 - AN ORDINANCE AMENDING ORDINANCE NO. 5-1993 OF THE CITY OF TITUSVILLE, FLORIDA, BY AMENDING THE ZONING MAP MADE A PART OF SAID ORDINANCE BY REFERENCE BY CHANGING THE ZONING CLASSIFICATION ON LAND LOCATED AT THE NORTHWEST CORNER OF ELIZABETH AVENUE AND

QUEEN STREET FROM THE SINGLE-FAMILY MEDIUM DENSITY (R-1B) ZONING DISTRICT TO THE MULTIFAMILY HIGH DENSITY RESIDENTIAL (R-3) ZONING DISTRICT ON 3.61+/- ACRES OF PROPERTY; HAVING PARCEL ID NO. 22-35-09-02-*-7; PROVIDING FOR SEVERABILITY; REPEAL OF CONFLICTING ORDINANCES; AND PROVIDING FOR AN EFFECTIVE DATE.

Toni Shifalo submitted a public speaking card. She commented on concerns for a particular meeting the applicant was required to hold with the community, which she advised was held on July 24, 2025, at 9:00 a.m., her viewpoint that a community meeting held on a weekday morning could not be easily attended by those that worked during the day, the significance of the proposed changes and how the community may feel about the proposed changes, her dislike of how developers handled policy requirements for holding their own meeting(s) with the community, notices published by the City and mailed to property owners within 500-feet advising the public of public hearing dates was not enough, etc.

There was no additional discussion.

The public hearing on Small Scale Amendment (SSA) Application No. 7-2025 - 1400 Elizabeth Avenue and Ordinance Nos. 4-2026, and 5-2026 were scheduled for the regular City Council meeting on February 10, 2026, at 6:30 p.m.

xxx

OLD BUSINESS

Resolution No. 1-2026 - Establishing the City's Economic Development Board of Directors and Executive Director – Economic Development Manager Nicholas Gow read Resolution No. 1-2026 - A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF TITUSVILLE, FLORIDA, ESTABLISHING THE CITY'S ECONOMIC DEVELOPMENT BOARD OF DIRECTORS; DEFINING THE ROLES OF THE EXECUTIVE DIRECTOR, ADMINISTRATIVE SUPPORT, LEGAL COUNSEL, AND ADVISORY COMMITTEES; ESTABLISHING THE BOARD'S LONG-TERM STRATEGIC AND FINANCIAL AUTHORITIES; APPROVING THE PROCESS FOR THE APPOINTMENT OF DIRECTORS; PROVIDING FOR SEVERABILITY; AND PROVIDING FOR AN EFFECTIVE DATE.

As outlined in the Council agenda packet, the request was to approve Resolution No, 1-2026 establishing the governance structure for the City's Economic Development Organization.

On November 25, 2025 (6:30 p.m.), City Council directed staff to develop and present a formal governance and board appointment framework for a City-supported Economic Development Organization. Council further directed that Economic Development Board Directors be selected collectively by Council from a vetted pool of qualified candidates, with additional at-large nominations provided by the Titusville Area Chamber of Commerce.

The proposed resolution established the Board's Directors, defined eligibility and appointment procedures, and outlined the roles and responsibilities of the Board, the Board's Executive

Director, and its administrative support, legal counsel, and advisory committees. The proposed resolution also authorized the Board to manage long-term economic-development strategy, recommend the allocation of economic-development funds (subject to City Council approval), and develop a long-term transition strategy toward organizational sustainability.

Adoption of the proposed resolution provided the formal governance foundation necessary to move forward with Board recruitment, strategic planning, and implementation of City economic-development priorities.

There were no individuals from the public that desired speaking on the agenda item.

Member Moscoso and staff discussed her questions related to

- Section 5 of proposed Resolution No. 1-2026 indicated the Economic Development Board's Director could utilize specialized, outside, legal counsel, and it did not mention the City Attorney. The nature of the board may require more transactional and legal input or assistance, as discussed by City Attorney Treasure
- Whether the Economic Development Board of Directors was classified as an advisory board and whether the board would be required to follow the rules for all other advisory boards, to which the answer was yes
- Board meeting minutes would be taken
- The board would submit or file quarterly reports
- Whether to re-word and change the proposed resolution's language regarding outside legal counsel, to instead indicate "The Executive Director may utilize outside legal counsel" to "The Executive Director may utilize outside legal counsel after consultation with the City Attorney", to which City Attorney Treasure agreed to this change
- There would be audits of the board's financial activities to ensure accountability
- Whether to have a Councilmember serve as a liaison to the board and attend the Economic Development Board meetings
- Once board members were appointed by City Council, the board would thereafter create bylaws and processes that would come back before City Council for their approval
- A preference to have board members live in North Brevard County, parallel with the Brevard County District 1 jurisdictional boundaries
- The financial audit presently proposed for the board was an annual audit
- Whether to implement Council authorization of board expenditures of certain threshold amount(s)
- Some of these discussion items would come later. The proposed resolution established the framing of the City's Economic Development Board
- Items and ideas discussed at this meeting would eventually be shaped, such as quarterly reports, spending thresholds, bylaws, etc. and would come back before Council

Motion:
Member Nelson moved to approve Resolution No. 1-2026 - Establishing the City's Economic Development Board of Directors and Executive Director, as modified and which included two (2) changes: (1) Change "The Executive Director may utilize outside legal counsel" to "The Executive Director may utilize outside legal counsel after consultation with the City Attorney" and (2)

Change "All Candidates must live in Brevard County" to "All Candidates must live in North Brevard County". Vice-Mayor Cole seconded the motion and the roll call vote was:

Member Moscoso	Yes
Member Nelson	Yes
Mayor Connors	Yes
Vice-Mayor Cole	Yes
Member Stoeckel	Yes

The motion carried unanimously.

xxx

NEW BUSINESS

Employee Benefits Projects — Status Updates – Human Resources Director Joe Denaro began by highlighting a substantive amount of information on the history and background on the agenda item. A report with more information was also provided in the Council agenda packet.

The requested action(s) at this meeting was for Council approval to facilitate a transition to a calendar-year (January 1 – December 31) plan year beginning January 1, 2027; approve direction on Health Plan Strategic Plan; and approve staff to negotiate contract extensions, execute required plan amendments, and delegate authority to the City Manager to complete all administrative and procurement requirements necessary to implement the transition.

Representatives of the Employee Health Benefits Consulting Group One Digital gave a presentation that highlighted the following information:

- Strategic goals
- Guiding principles for the 2026-2027 proposed strategies
- Collaborative development and cross-functional approach
- Current state (status) of the City's contracts had varying effective and expiration dates, three different open enrollment periods, and required manual tasks for administering each, etc.
- Four strategic or proposed actions included in the Council meeting agenda packet and outlined in the Report to Council

Council discussion ensued with the One Digital employee benefits consultants on:

- Contemplating whether to piggyback on Brevard County's contract and coordinate a joint procurement in 2027
- Instead of waiting until 2027, consider taking present action on the pharmacy benefits management (PBM) portion and take advantage of leveraging the minimal fees, due to there was still enough time in the City's contract with Aetna
- Moving forward with the goal to have more flexible, better financial opportunities, innovative strategies, possible international sourcing of some drugs, and many more programs that Aetna does not currently allow

- The current contract with Aetna began seven (7) years ago
- Changes or improvements the benefits consultants recommended going forward included

    - Improve the PBM portion - closer analysis for opportunities, including rebates, lowest net cost approaches, etc.
    - Through the medical audit – identifying any additional components that was not being administered correctly
    - From an anecdotal viewpoint, the consultants had just gone through a competitive RFP process for another client comparing Aetna's discounts to other health insurance carriers. Aetna was found to be comparable
    - On the claims side, which was the bulk of costs, Aetna was "very" competitive
    - From an administrative fee cost, Aetna's costs were in-line and competitive with Brevard County's costs, even with Brevard County being a larger employer

- The City's basic health plan was provided at no cost to employees
- The City's enhanced health plan was offered at a cost of $100 paid by the employee
- The enhanced plan was designed by Digital One Consultants
- Whether out-of-pocket cost to employees was factored-in, when the enhanced plan was designed, to which the answer as yes
- The benefits or advantages of employees on the enhanced health plan included lower co-pay costs, lower deductible costs, etc.
- Previously, when both the basic and the enhanced plans were offered at zero cost to employees, no one really questioned or examined the cost analysis

Discussion continued. Mayor Connors discussed several concerns and questions with the consultants on the following concepts:

- A concern that if an employee on the enhanced plan hit their maximum, the employee(s) could end up paying $200 more per year
- Aetna was not a Third-Party Administrator (TPA), but instead Aetna was a carrier (insurer)
- When considering "carving-off" the PBM component, there was discussion on whether there were many PBMs that were certified with Aetna
- The consultants would not recommend *CVS Caremark;* however, there were a few middle-market PBM programs the consultants advised various cities used, which offered more flexibility
- There were a lot of PBMs in the market that would bid on a project like this one
- The Mayor's disagreement that the Aetna PBM was not in line with market norms
- Observation on the last or a prior pharmacy audit and Mayor Connor's reading from details from the audit regarding Rx drugs, an internal drug list referred to as *Rx Defender*, clinical saving opportunities, etc.
- Pharmacy plan benefits reviewed by consultants to make their recommendations, including seeking the "minimum disruption with same effectiveness". Many medication alternatives provided the same effectiveness, but at a lower cost
- The importance of performing pharmacy audits and ensuring everyone knows their responsibilities

- Why generics, bio sims or biosimilars, and the formula or formulary were excluded from the pharmacy audit
- There were ways PBMs could affect drug prices
- When forecasting, there were times when PBMs could not affect the cost of some pharmacy or prescription drugs
- The consultant's objective was to see little or no drugs excluded and the drug exclusions list was reviewed during the RFP process
- There were rebates on Humara and the exact number and more information could be provided to the City Council following the meeting
- Concern for the Titusville municipal government's health claim costs. In 2025, the government had to move more funding over to cover the City's medical fund
- The Mayor's concerns on the timeline and actions to make improvements
- The Mayor's desire to make the health plan more competitive and take a comprehensive look at employee health benefits

Human Resources Director Denaro joined the discussion and reviewed information on:

- Review of the 2019 RFP competitive bid process and consultant findings in 2019
- Discounts were a reason why Aetna was previously selected
- Focus on pharmacy side
- Bringing employees' concerns and input
- High-cost claims
- An issue with GLPs. There were previously no guard rails for GLP-1s
- The current program was designed for the employees and an employee committee assisted in preparing a plan
- Large questions to ask and/or to ask the employees moving forward:

    1. How could the City contain its costs
    2. How to keep the premiums manageable to the employees themselves
    3. And while simultaneously keeping in mind and managing the City's claim costs

- There were some extremely high-cost claimants
- One claim in particular, had the City not been able to manage discounts that Aetna provided, was over a $3 million claim by itself. After discounts were applied, the cost of the claim was reduced to $900,000. Then, after reimbursements were applied, the municipal government had to pay only the deductible of $190,000 to settle the $3 million claim
- Staff felt cost containment strategies were in place to move forward
- Moving forward, there were current discussions occurring on the pharmacy program, listening to employees on how the City could manage co-pays, deductibles, premium costs, while at the same time securing or providing an affordable plan to employees

To the above, Mayor Connors advised the information discussed thus far had not answered his question(s) of "how did we get from---we want to shop-out for the best ideas as a consultant to we are going down this path and directing a strategic plan".

In addition, Mayor Connors advised that he listened to employees. Additionally, Mayor Connors commented on his reviewing the sequence or order of decisions that were made during prior years and prior decisions "did not add up". There was a pattern or a track record and for this reason, Mayor Connors wanted to see something major done. He did agree, however, the PBM (pharmacy) was "low hanging fruit" (meaning more easy or immediately able to address than other items), but intertwining it with Aetna as Third-Party Administrator (TPA) was probably not the best solution in Mayor Connors' opinion.

Member Stoeckel advised that when speaking about health care benefits for employees, her top two (2) priorities were: (1) Quality of life. Making sure employees could go to the doctor they needed to go to and that employees were not constrained by certain things; and (2) Cost.

Member Stoeckel recalled City Council approving a prior motion and directive, at a prior City Council meeting, to do a Request for Proposal (RFP) to go out, so that Council could see options. She requested the status of this prior Council directive.

Mayor Connors read the particular motion for which Member Stoeckel recalled from the Regular City Council meeting on June 10, 2025, as followed:

> *Motion: Member Stoeckel moved to request staff to draft a Request for Proposal (RFP) for employee benefits consultant (health insurance) for FY 2026 and bring back to Council for their review and recommendations. Vice-Mayor Cole seconded the motion.*

On June 10, 2025, the above motion carried unanimously.

Human Resources Director Denaro gave an update on Council's directive of June 10, 2025. A scope of work for the RFP was presently being drafted, which was estimated to be ready in February 2026. Once the draft scope of work was completed, it would be brought back to Council for their review. Once agreeable by City Council, the RFP would be issued or submitted into the bid market in approximately March 2026.

Member Stoeckel commented on Mayor Connors' career or expertise was related to these subjects, the desire to timely provide the draft scope of work to Council, review all the criteria, allow Mayor Connors to review the scope of work and allow him to offer some good questions to ensure the City was thoroughly covering the objectives and while looking-out for the employees, a desire to have received updates on the prior directive during the last few months while the Council was simultaneously working to make improvements for the City, and whether the requested action at this City Council meeting conflicted with Council's prior directive.

Mayor Connors recalled previously, during open enrollment, Council approved something that was already offered to the employees. He felt the prior idea was to start from scratch on October 1, 2025.

Staff stated there was a responsibility to develop a large-scale strategic plan for the employee benefits program at the beginning of the current Fiscal Year that began on October 1, 2025.

Staff also advised to continue down this path, the City needed professional benefits assistance from the consultants to guide the City through the medical plan component. Then, the scope of work to comply with Council's prior directive(s) was in progress and would be coming back to Council soon. Additionally, there were discussions presently ongoing with Brevard County. Staff was not purposely delaying matters and the requested action proposed at this Council meeting were cost-containment strategies.

Mayor Connors paused his comments for the time being. He would also have technical questions to address on pharmacy, but he would also pause further comments and questions until a later date.

Motion:
Member Nelson moved to table *Employee Benefits Projects — Status Updates* to the regular City Council meeting on February 10, 2026, at 6:30 p.m. and requested the Request for Proposal (RFP) for employee health benefits be added as an agenda item on the regular City Council meeting on February 10, 2026, at 6:30 p.m. for the City Council's review. Vice-Mayor Cole seconded the motion.

Member Stoeckel desired seeing the RFP on the next meeting agenda, but she was not sure she would be ready to approve the action requested at this meeting on February 10, 2026. It was not her professional expertise, but listening to the Mayor's input thus far, it had initiated further thinking for questions that may need to be further explored and improved upon.

Mayor Connors advised that he did not yet fully support the strategic plan or the presentation given earlier in the meeting. He also wanted new ideas to move forward. Concerning GLP-1s (a class of medications mimicking the GLP-1 hormone and related to regulating blood sugar, etc.), this was not the number 1 issue. To him, it went back to direct contracting with local providers like Parrish Medical Center, providing a wrap-around network, etc. There were many options.

The roll call vote was:

Member Nelson	Yes
Mayor Connors	Yes
Vice-Mayor Cole	Yes
Member Stoeckel	Yes
Member Moscoso	Yes

The motion carried unanimously.

Member Stoeckel requested whether staff researched the State insurance plan for City employees. Her employer, a college/university, had switched its employees over to the State insurance plan. To this, a Digital One representative advised the college made "the plan switch" due to *Florida Statute* requirements.

xxx

Christian Court Townhomes - Preliminary Plat (ADDENDUM) – Following the initial publishing of the City Council agenda packet, more information was added to this agenda item in a subsequent, published, addendum that supplied the Council and public with approximately 18 additional pages of information.

The request was to approve the Preliminary Plat for Christian Court Townhomes. At their meeting on January 7, 2026, the Planning and Zoning Commission recommended approval, 7-0. A request was made to the applicant to explore and consider putting in a hammerhead turnaround on the dead-end street that abutted Tracts K and L or Lots 43 and 42 on the provided preliminary plat.

Community Development Director Parrish highlighted a detailed staff report included in the Council addendum agenda packet, staff's findings, background information, and that many previous development orders and approvals had been issued for prior development plans for the property over the years, such as plats, re-plats, variance approvals (1997 mentioned), etc.

To this, staff advised they would have to account for the maximum pervious coverage of all the other properties that had been developed. Staff completed a thorough investigation of records and determined what the property owners could and could not do with their property, what changes had occurred to the Code since 2006, prior property owners obtaining certain variance approvals to the City's Codes from the Board of Adjustments and Appeals, etc.

At present, staff believed that the proposed preliminary plat was consistent with the City's Code.

Mayor Connors requested hearing from the project representatives and any public that desired speaking on the request.

Kim Fisher, representative of the applicant, waived her right to speak upon initially being called upon.

John Morris, a representative on behalf of the proposed preliminary plat, was available to answer any questions.

Member Stoeckel and staff discussed her questions on the hammerhead turn-around and whether the applicant was okay with it.

Member Moscoso and Mr. Morris discussed her concerns on parking, having enough parking, part of the project was in the reclaim area (Area of Critical Concern), the applicant was limited to what they could do with pervious surfaces, whether additional parking could be added, etc.

Member Moscoso discussed whether the plat could be amended, due to the original plat was never recorded, using the present time as an opportunity to make changes, and if Council requested changes to the plat, then prior variance approvals "would not go along with any changes made by Council".

Mr. Morris advised that the applicant could explore Member Moscoso's comments. He advised this was a little bit different because the project was located in an already existing subdivision. The

road and the infrastructure were already there and the applicant was simply taking over, bringing it up to existing Code, and was then going to finish the site. The current project (original plat) was not a "raw deal" and the applicant could not maneuver and manipulate the land and "add to it". It would be worth talking about, but given the current setback requirements, he was unsure how much the applicant could adjust the parking areas.

Member Moscoso advised this "was a raw deal" because "it" (original plat indicated) was never recorded, indicating it could be "scrapped" entirely. She also felt the Planning and Zoning Commission (P&Z) was not given all the information and could not make the best analysis, due to only 4 pages being originally supplied to P&Z and City Council to assist them with making their decision. This was why she asked for an addendum to the Council agenda to be published for this Council meeting. Member Moscoso further commented on the following concepts and concerns:

- The project or some part of it was in the Area of Critical Concern (ACC)
- Prior variance approvals approved by the Board of Adjustments and Appeals (BAA) were not binding, unless Council approved the present proposed request
- The subject matter and conditions of prior variances approved by BAA and details of those approvals for BAA meetings on May 28, 2025 and August 27, 2025
- A desire to see the applicant further develop the property, but concerns the number of units, the amount of lot coverage, concerns for recent historic flooding, etc.

Member Nelson agreed with Member Moscoso. Member Nelson advised that having a discussion about more than 50% lot coverage was concerning and she also felt more information was needed. Member Nelson also expressed concern for a substantial reduction in setbacks. Additionally, Member Stoeckel supported Member Moscoso's comments on parking and desired subdivision residents have enough parking. Member Nelson was also concerned about flooding.

Staff advised this was a plan that was not a rezoning. It went through the administrative process with a site plan associated with it and the additional documentation requested by Member Moscoso was not presented to the Planning and Zoning Commission (P&Z) and City Council, because it was not required. Instead, the Code required staff to present the preliminary plat, which was basically the layout presented in the document(s) in the initial published Council agenda packet.

The addendum was published with additional information recently requested by Member Moscoso and which could have been made available to P&Z, too, if it was requested by a board member or the board. The additional information that was provided in the addendum did not include the entire amount of information submitted with the applicant's site plan, but instead only several sheets of the site plan were made part of the agenda packet(s).

Community Development Director Parrish continued and advised this project has gone through review and met all the requirements, received variance approvals according to City Code requirements, and the decisions were binding on this particular layout. He interpreted there was an indication a Councilmember or more than one Councilmember, at this meeting, desired "revising something," like the subdivision's layout. Staff recommended that if Council did this, the Council would have to clearly identify what Code criteria the request presented at this meeting was

inconsistent with to substantiate making the change(s). Staff asked, "What was it that the request was inconsistent with, when the request was already determined to be consistent."

Member Moscoso did not feel staff provided the P&Z and Council with all the information needed to make a good decision. Member Moscoso advised the original plat was never recorded and the Council was not bound to anything. For this reason, Member Moscoso advised that Council could ask for changes to ensure important concepts, such as ensuring emergency vehicles could get-in and out with no issues, flooding was not an issue, ensuring the aquifer could recharge in the Area of Critical Concern (ACC), her being displeased with the setbacks, and a whole list of other things were worrisome or not settled in her viewpoint. Further, Member Moscoso reiterated that it (original plat indicated) was not recorded; therefore, the Council was not bound to it per *Florida Statutes*.

Community Development Director Parrish stated that if Council desired changing the Code to make it mandatory to provide Council and/or boards with additional information they sought or needed and on a routine basis, Council would need to make this change to the City's Codes.

Second, staff read from a section(s) of the City's Code that discussed preliminary plats and consideration by the P&Z and City Council's consideration of such. This information indicated what approval of a preliminary plat meant toward allowing the next step of the development or site planning process. If a preliminary plat was denied by City Council, the Code indicated that no similar and subsequent submittal would be allowed for one year. Additionally, if the preliminary plat was denied by City Council, the Council was required to specify or cite the City's Codes for their reason for denial.

City Attorney Treasure agreed and advised that if Council were to deny the request, the Council would have to state or cite the reason why.

Member Moscoso indicated mistrust of the request and analysis. She also commented on putting herself in the shoes of a new P&Z member. She felt a new P&Z member would not know what questions to ask. She also felt it was difficult getting additional information.

John Morris, a representative on behalf of the proposed preliminary plat, advised the request had taken the last two (2) years of working with staff to endure multiple reviews. For background purposes, he advised the applicant's initial application began as as a Master Plan Development application that went or would go to the State for platting (not the City), so under this process, the project would not have been *fee simple lots* and instead, the entire community would be one large development that would bypass City Council. That was the applicant's first option.

Mr. Morris continued. He advised after several meetings with City staff, the applicant learned there was another route (a second option), being the *fee simple route*, which was the present option the applicant was pursuing and it was more beneficial to the City versus having one-platted, apartment-like, townhome community. Additionally, taking two (2) years thus far to arrive at the present request was part of the applicant's frustration, and they rather not go back to option no. 1 through the State.

Mr. Morris advised that it was a better development for the City by providing *fee simple ownership* of individual lots, versus having one massive rental-style community afforded by the process through the State.

Member Moscoso confirmed the last time the property changed ownership was in December 2025.

Members Stoeckel and Moscoso discussed the following concepts with staff, as well as staff provided information, as followed:

- The current land use of the subject site was High Density Residential and the zoning was Multifamily High Density Residential (R-3) zoning
- Questions pertaining to describing the hardships indicated for the prior variance applications heard by the Board of Adjustments and Appeals (BAA)
- It was indicated the BAA had determined the variance requests met the hardship criteria
- The BAA was presented with the same layout also presented to Council
- The current project was a difficult one, due to various ordinance changes to City Codes over the last 20 years (to apply to an already existing subdivision)
- Hurdles that project representatives had to overcome along the way, changes that were made to project configurations here and there, and working around infrastructure that was built on the property 20-years ago
- The rationale for why one particular and additional variance application was submitted to the BAA, which one Councilmember advised was submitted to overcome a mistake(s) made in a prior variance application
- Whether prior BAA meeting minutes or notes were distributed to Council (indicated were requested by Member Moscoso)
- One Councilmember's concern and comparison to a separate or unrelated subdivision that had been completed and assurances it met the criteria; however, when a historic amount of rain occurred over a few hours in Fall 2025, substantial flooding caused the closure of the road at or near Interstate 95 next to-at-or-in this other subdivision
- A desire to address and offset future flooding of citizens' homes and property, as the surrounding topography and areas around the City were further modified or developed over time and which may cause areas that did not historically flood before to develop flooding issues

Mr. Morris provided a rebuttal on the concerns of flooding. He advised that the subdivision had been in existence for 20 years and the applicant had an advantage to observe how drainage on the site worked and how it may affect nearby properties. The applicant was not changing anything. The grading was there. The road points were there. The stormwater ponds were there. Everything had been functioning for 20 years and had "not bled" into the existing neighborhoods.

Vice-Mayor Cole and City Attorney Treasure discussed his questions on whether City Council could legally disapprove the request, if specific reasons or Code was not identified as to why the request went against the Code.

City Attorney Treasure advised that if City Council were going to deny any application or request, they would have to state for the public record the substantial, competent, evidence as to why City

Council would deny a request, including what authority Council was using or relying on to base their decision.

Member Moscoso read from the formal approval details of a prior, related, variance application, indicating the Board of Adjustment of Appeals (BAA) approved a particular variance contingent on a *re-plat* to support the proposed development. This was why she did not support the request at present.

Member Moscoso and City Attorney Treasure further discussed the differences in opinion on whether the prior variances previously granted by BAA were binding under the authority of the BAA, and whether the variances "went with" the application (the proposed preliminary plat).

To the above, Mr. Morris advised the project would be developed regardless of whether or not the applicant platted individual lots or as a master plan. The prior approved variances gave authority to build the project as viewed on the layout. The only question before the City Council at this meeting was whether the applicant platted with the City of Titusville or with the State.

Member Moscoso did not want to be personally or partly responsible for unintended consequences that speculatively or allegedly may occur if City Council approved the request. She did not think the project was in favor of the City or the residents. Regarding the discussion a moment ago with the City Attorney, she would also need more time to research the City Attorney's opinion on whether prior variances "went with" the application (proposed preliminary plat).

Member Nelson commented on facing a legal dilemma and unless the City Council could specify why the request did not meet Code or legal criteria or how the request was in violation with the Code, the City Council might be facing a situation where they may have to approve the request.

Member Moscoso did not support approving the request, due to subdivision's original plat was never recorded.

Mayor Connors commented on the staff report and options indicated for Council. To this, staff read from substantive information in the Council agenda packet/the addendum, procedures from the *Quasi-judicial Rules of Procedure*, Council being required to identify any particular areas of the Code the Council may feel or determine the request may be in violation with, etc.

Member Moscoso desired tabling or postponing the request to another meeting. She did not feel she had received enough information.

Mayor Connors called for additional citizens and public that desired speaking on the proposed preliminary plat.

Kim Fisher, the engineer of record for the Christian Court Townhomes - Preliminary Plat (project), offered rebuttal. She commented on the project representatives weighing and contemplating various concepts and options for the project, creating a condominium project through the State, and creating or considering the affordability of housing for residents. About cost, developing a traditional subdivision that would have a 50-foot right-of-way and sidewalks on both sides---this

type of development would cost much more and may not meet the affordability-index for residents. To get this project going, the representatives had to work with what was already built on site and previously approved. The project representatives were also required to abide by the City's Codes.

Ms. Fisher further commented, as followed:

- The City's Codes did not require additional parking spaces for their project, although the rational was understood for why more parking was desired
- The project representatives had no issue revisiting the concept of parking and could explore creating grass-parking spaces if desired (if so, to occur during further development processes)
- The City's Public Works Department indicated it did not support abandoning drainage and utility easements at the rear of the property, due to they were presently being utilized
- Some existing easements changed the setback requirements
- Trying to work within the confines, changes in lot sizes and setbacks from what was allowed 20 years ago
- If required to scrap the original plat and starting over to re-work brand new plans in their entirety, it would be for a substantive cost
- Being good stewards of land and providing affordable housing

Member Moscoso asked Ms. Fisher whether the applicant would be willing to give-up some of the lots to provide additional parking, to which Ms. Fisher could not answer for the applicant; however, she did not think the applicant would support. The applicant had been working on the project with the City and to meet compliance with the Code for two (2) years now. Ms. Fisher also commented that from an engineering perspective. parking could be redesigned to have two cars in the driveway and in front of the garage. If the applicant was allowed to be creative, the applicant could look at parking again. It was noted that a Homeowners Association (HOA) would be created at a later date for the project.

Member Stoeckel desired the more expensive project, having more green space, and fewer units. She did appreciate the concept of providing affordable housing. Affordable housing was also a "buzz word" around the State at present. Member Stoeckel commented that the City was presently waiting on word about grant funding, for the purpose of receiving or developing analysis on how "our numbers" compared to the surrounding areas, because in Titusville, traditionally, the City had lower home values and because of this, the City Council typically adopted a higher millage rate. Member Stoeckel advised that one of her goals was to have residential projects that increased the City's tax base (increased taxable values) to be more even or comparable with surrounding communities with higher home values.

Ms. Fisher commented on the subject site being located near a fast-food restaurant and an auto parts store and whether individuals seeking to purchase a more expensive residence would want to buy and live next to these businesses. Ms. Fisher added that zoning needed to be transitional, to which Member Stoeckel acknowledged the fairness of Ms. Fisher's rebuttal comments.

Ms. Fisher added that if parking was modified, the plat would not change because the applicant would use part of the common area(s) to create additional parking, if more parking was added.

James Troutman, a member of the Planning and Zoning Commission (P&Z), briefly commented on the Commission's discussion and his personal viewpoint that he was most worried about the hammerhead turn-around, how he voted on the request when it was presented to the P&Z, priority of life and ensuring the swift ability of first responders being able to get in and out when needed.

Kay St. Onge read from a prepared statement that discussed her concerns for trees on the subject site, the preliminary plat, portions of property that would be cleared for development, the importance of planting canopy trees, following the tree protection ordinance, her belief the 2005 final plat was null and void, the project should be subject to the 2021 tree protection and canopy ordinance intended for residential subdivisions and which included townhomes per the City Council meeting minutes of September 28, 2021, etc.

Vice-Mayor Cole revisited his earlier question(s) on whether City Council could legally disapprove the request, if specific reasons or Code was not identified as to why the request went against the Code. City Attorney Treasure advised her earlier response still held. Staff could also not guide Council on their decision; however, staff could review the Code criteria and whether applicants met Code criteria.

Community Development Director Parrish reviewed the City's Codes against the requested action.

It was 10:27 p.m.

Motion:
Member Nelson moved to extend the meeting until 11:00 p.m. Vice-Mayor Cole seconded the motion and it carried unanimously.

Member Nelson and staff discussed

- The project would be required to abide by the tree protection ordinance
- The applicant did not support the hammer-head parking space. Staff reviewed this proposal, took an illustration from the applicant on what it would look like, the site review team looked at it including the Fire Department, and the recommendation from the Planning and Zoning Commission (P&Z) was also reviewed by staff, who "did not see the need for it"
- The Fire Department was satisfied with the illustration provided in the addendum to the Council agenda. What the P&Z was asking for was something way more substantial and would require taking out (removing) several units and the Fire Department did not see a reason for the P&Z recommendation

Ms. Fisher commented on there being an existing "t-turn" or "hammerhead" on the site already, there was approximately 130-feet to the end, and an "NFPA" was 150-feet that vehicles could use to back-up. She indicated it was not necessary to add another hammerhead turn-around. If so, she believed it would not be used as designed, but instead, people would "park there".

Member Stoeckel and staff discussed the history and conditions related to the project being in the Area of Critical Concern, for which substantive technical details were discussed on this concept.

Next, Member Moscoso and staff discussed whether staff had identified any areas of the Code or issues that indicated any part of the project did not conform. Staff did not provide a staff report for the type of request being presented, as they did for some other applications, like a rezoning application. Staff also advised they completed a substantive review and perpetuated as many questions as necessary, until their role in reviewing all Code requirements was fulfilled and exhausted. The objective was to be consistent and abide by Code.

About another new subdivision mentioned earlier that in fall 2025, along with the City as a whole, experienced an unusual/one-time amount of record-setting, heavy, rainfall in a short amount of time and caused widespread flooding at the new subdivision and elsewhere, staff advised the rainfall event was an unprecedented event that anyone or any professionals could not necessarily design or plan for such an unprecedented event.

Staff also advised the applicant of the *Christian Court Townhomes - Preliminary Plat* met the minimum stormwater and drainage requirements set by the State and City Codes.

Member Nelson was not entirely happy with the project, but if the project complied with Code requirements, Council may be required to approve the request.

Motion:
Member Nelson moved to approve the Preliminary Plat for Christian Court Townhomes, with a condition that the applicant work with staff to provide additional parking. Vice-Mayor Cole seconded the motion.

Staff asked whether a threshold was intended for the proposed condition regarding parking. Member Nelson advised no. There was no objection from Vice-Mayor Cole that had seconded the motion.

Member Stoeckel desired tabling the request. She wanted more time to discuss the request with City staff and City Attorney. She wanted to be as confident as possible utilizing all information possible to make her final decision.

The roll call vote was:

Mayor Connors	No
Vice-Mayor Cole	Yes
Member Stoeckel	No
Member Moscoso	No
Member Nelson	Yes

The motion failed, with 3-votes no and 2-votes yes.

xxx

Motion:
Member Nelson moved to table the Preliminary Plat for Christian Court Townhomes to the regular City Council meeting on February 24, 2026 at 6:30 p.m. Vice-Mayor Cole seconded the motion and the roll call vote was:

Vice-Mayor Cole	Yes
Member Stoeckel	Yes
Member Moscoso	Yes
Member Nelson	Yes
Mayor Connors	Yes

The motion carried unanimously.

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PETITIONS AND REQUESTS FROM THE PUBLIC PRESENT (NON-AGENDA ITEMS) – None.

xxx

MAYOR AND COUNCIL REPORTS

Mayor's Report - Mayor Connors commented only briefly on attending the State Legislative Action Days in Tallahassee earlier in the week.

xxx

Council Reports -

Vice-Mayor Cole commented on there being only one cold weather or similar shelter in Titusville that was run by Life Ministries. He was personally working with the pastor to raise funding for the shelter and provide beds. At present time, the shelter could not accept clothing or food. There were also complaints from neighbors concerning mishandling or damaging property. The work and the goal were still an important one.

xxx

Member Moscoso and staff discussed that a public announcement would be made soon for when school zone speed cameras would be implemented. The warning campaign would also begin soon. To this, Member Stoeckel suggested waiting to implement the program until August when kids went back to school, for the purpose of applying the "60-day" grace period to the program, once it was launched. Mayor Connors mentioned the 60-day grace program leading up to this suggestion.

xxx

Member Stoeckel commented briefly on attending the State Legislative Action Days in Tallahassee earlier in the week. The Legislature was working on property taxes, fixing issues with Senate Bill 180, Sovereign Immunity, and more.

xxx

Member Nelson thanked Mayor Connors for issuing a proclamation to Kay St. Onge of the Titusville Tree Team (an informal organization).

Member Nelson commented on a family member that had flooding in their home and inside homes in the same neighborhood. The way she understood it was when Council previously authorized updating the City's Stormwater Master Plan, earlier plans to address flooding in her family member's neighborhood "came-off the list of projects for this year". For this reason, Member Nelson felt that when Council came-up with ideas, they should fully discuss them with the City Manager and staff to offset removing other projects elsewhere or discuss various related details.

Mayor Connors advised there was no funding for a Stormwater Master Plan in the current fiscal year budget and it was being programmed into the Fiscal Year 2027 budget. He was curious how the project could be taken off the list. Mary Lane and Heritage Drive were bumped into the next year.

Concerning updating the Stormwater Master Plan, City Manager Abbate advised that he asked the Finance Director to evaluate taking a loan from another fund, such as General Fund, managed by the City and bring this to Council for formal authorization at mid-year approval.

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Member Nelson and City Manager Abbate discussed the status of the nanobubbles technology pilot project.

xxx

CITY MANAGER'S REPORT

City Manager's Report - City Manager Abbate submitted his written report.

xxx

City Manager Abbate highlighted information on upcoming events, as provided in his report. No action was requested.

xxx

CITY ATTORNEY'S REPORT - None.

xxx

With no further business to discuss, the meeting adjourned at 10:48 p.m.

_____
Andrew Connors, Mayor

ATTEST:

_____
Wanda F. Wells, City Clerk

City Council
Regular Meeting
February 10, 2026

The City of Titusville City Council met in regular session on Tuesday, February 10, 2026, at Titusville City Hall, second floor, Council Chamber, 555 South Washington Avenue, Titusville, Florida 32796.

xxx

Mayor Connors called the City Council meeting to order at 6:30 p.m. Those present in the Council Chamber included Mayor Andrew Connors, Vice-Mayor Herman Cole, Jr. Col USAF Retired and City Council Members Megan Moscoso, Jo Lynn Nelson and Dr. Sarah Stoeckel. Also present were City Manager Tom Abbate, City Attorney Andriene Treasure, and City Clerk Wanda Wells. Sr. Administrative Assistant Emily Campbell completed the minutes.

xxx

Pre-recorded procedures for public comment, participation, and orderly conduct were played for all individuals that were in attendance or watching the meeting.

Mayor Connors asked for a moment of silence to remember former Vice-Mayor Joe Robinosn who passed away on February 8, 2026.

Pastor Roger Hackenberg from Hope Community Fellowship was not present to provide the invocation. Mayor Connors requested a moment of silence. Mayor Connors led those present in the *Pledge of Allegiance to the Flag*.

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APPROVAL OF MINUTES

City Manager Abbate advised the request was to approve the minutes of the regular City Council meeting on December 9, 2025 and January 29, 2026 (5:30 p.m.).

Motion: Member Nelson moved to approve the minutes of the regular City Council meeting on December 9, 2025 and January 29, 2026 (5:30 p.m.). Vice-Mayor Cole seconded the motion. The roll call vote was:

Member Moscoso	Yes
Member Nelson	Yes
Mayor Connors	Yes
Vice-Mayor Cole	Yes
Member Stoeckel	Yes

The motion carried unanimously.

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SPECIAL RECOGNITIONS & PRESENTATIONS – None.

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BOARDS AND COMMISSIONS

Board of Adjustments and Appeals – City Manager Abbate advised that the Board of Adjustments and Appeals semi-annual written report was included in the agenda packet. No action was requested.

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PETITIONS AND REQUESTS FROM THE PUBLIC PRESENT (NONAGENDA ITEMS) –

Connie Milton stated that Sisson Road needed improvement. She asked whether Pine Tree Gardens Townhouses off Sisson Road could receive more frequent trash pickups, noting that a pile of trash had remained there for two weeks. She also stated that the chain-link fenced area on Sisson Road owned by the City. Additionally, she stated that the turning lanes from Sisson Road onto State Road 50 needed to be expanded.

xxx

Kathleen O'Rourke recommended that council hear the entire discussion regarding Comprehensive Plan Amendment (CPA) No. 2-2025 Gemini Lakes (Royal Oak) and not postpone the meeting if it extended past 12:00 p.m., stating that postponement would be detrimental to those who had hired outside speakers and would prevent all citizens from being heard.

xxx

Stan Johnston stated that he was a registered professional engineer. Mr. Johnston discussed emails that he sent to City Council and City staff, etc. Mr. Johnston also discussed culverts along I-95 and the sewage spill that occurred in December 2020.

xxx

City Manager Abbate advised that Consent Agenda Item 8D - Award of Contract for Bayview/Seminole Project was pulled by staff. This item would be rescheduled to the regular City Council meeting on February 24, 2026 at 6:30 p.m.

xxx

CONSENT AGENDA

City Manager Abbate read Consent Agenda items A, B and C as followed:

A. Resolution No. 2-2026 appointing members to the Titusville Social Services Ad Hoc committee - Approve Resolution No. 2-2026 Titusville Social Services Ad Hoc committee appointments.

B. Change Order #1 to WO# AECOMWR016 for Additional Engineering Services - Approve change order #1 to Work Order #AECOMWR016 to AECOM Technical Services, Inc. to provide environmental resource permits (ERP) services related to the Mourning Dove Water Treatment Plant 4-log Treatment Project, in the amount of $101,700 to provide engineering consulting services including, but not limited to, collection of stormwater management data of the site, hydrologic and hydraulic modeling, drainage report, and preparation of the environmental resource permit.

C. Trenchless Rehabilitation and Maintenance (slip lining) of Sewer Lines and Manholes - Approve the utilization of the County of DuPage, IL contract 23-065-PW with Insituform Technologies/Omnia contract for trenchless rehabilitation and maintenance of pipeline infrastructure to perform sewer lining and manhole rehabilitation services for Basin 13 for the City of Titusville, approve the associated budget amendment, and authorize the City Mayor to execute the contract.

D. Award of Contract for Bayview/Seminole Project - Approve the award of a Contract for Bid CN26-B-004/LR to AMCON Development Group LLC of Winter Springs, FL for the replacement of Seminole Lift Station and Demolition of Bayview Lift Station in the amount of $4,135,774.83 and authorize the Mayor to execute the Contract.

City Clerk Wanda Wells advised that three speaking cards were submitted for Consent Agenda Items.

Susan Pinder discussed Consent Agenda Item 9A - Resolution No. 2-2026 appointing members to the Titusville Social Services Ad Hoc Committee. She stated that she was speaking for Dr. Gina Beckles and reviewed her efforts in supporting the Harry T. Moore Social Services Center. She spoke in support of the Titusville Social Services Ad Hoc Committee and stated that citizens were in need of social services.

Lynn Golden also discussed Consent Agenda Item 9A - Resolution No. 2-2026 appointing members to the Titusville Social Services Ad Hoc committee. She stated that the original plan for the ad hoc committee was to appoint seven members; however, the Council appointed all eleven applicants. Ms. Golden expressed hope that the members of the board would support the target area and bring meaningful change, rather than just adding it to their resume.

Stan Johnston stated that he was a professional engineer. He discussed 4-log virus and boil water notice. He stated that boil water notices caused businesses to close and lose money. Mr. Johnston stated that this was a big issue and the City needed to address it.

Motion: Member Nelson moved to approve Consent Agenda items A, B and C in accordance with recommendations. Vice-Mayor Cole seconded the motion. The roll call vote was:

Member Nelson	Yes
Mayor Connors	Yes
Vice-Mayor Cole	Yes
Member Stoeckel	Yes
Member Moscoso	Yes

The motion carried unanimously.

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ORDINANCES – SECOND READING, PUBLIC HEARING AND RELATED ACTION

Ordinance No. 3-2026 - Annual update of the 5-Year Capital Improvements Schedule (2026-2030) relating to the Capital Improvement Element of the Comprehensive Plan – City Manager Abbate advised the request was to conduct the public hearing and final reading of Ordinance No. 3-2026. This was a legislative item.

Community Development Director Brad Parrish read Ordinance No. 3-2026 an ordinance of the City of Titusville updating the Five-Year Capital Improvements Schedule of the Comprehensive Plan of the City of Titusville for the 2026 – 2030 horizon relating to the Capital Improvement Element; and providing for an effective date the second time by title only.

At their January 21, 2026 meeting, the Planning and Zoning Commission recommended approval, 6-0.

Community Development Director Brad Parrish stated that staff were required to provide a level of service analysis to the City Council each year. He explained that staff had completed this requirement through the update to the Capital Improvements Element, which was mandated by statute and scheduled within the City's Comprehensive Plan. He further noted that the element included a five-year schedule of improvements that assisted staff in maintaining and enhancing level of service standards for concurrency-related facilities.

Stan Johnston stated that he was not in support of this capital improvement element. Mr. Johnston discussed culverts that were along Interstate 95 in Titusville. He also discussed the City's Stormwater Master Plan, etc.

Motion: Member Nelson moved to approve Ordinance No. 3-2026 - Annual update of the 5-Year Capital Improvements Schedule (2026-2030) relating to the Capital Improvement Element of the Comprehensive Plan, as recommended by staff and the Planning and Zoning Commission. Vice-Mayor Cole seconded the motion. The roll call vote was:

Mayor Connors	Yes
Vice-Mayor Cole	Yes

Member Stoeckel	Yes
Member Moscoso	Yes
Member Nelson	Yes

The motion carried unanimously.

xxx

Comprehensive Plan Amendment (CPA) No. 2-2025 Gemini Lakes (Royal Oak) – City Manager Abbate advised the request was to approve the transmittal of the Comprehensive Plan Amendment Application No. 2-2025 Gemini Lakes (Royal Oak) to the State of Florida's Land Planning Agency for review.

On January 21, 2026, the Planning and Zoning Commission recommended not approving the transmittal and directed staff to conduct a small area study to guide redevelopment of the area.

Community Development Director Brad Parrish stated that the applicant, Robert Wolf, on behalf of the property owner Royal Oaks FL, LLC – FKA Toulon Apartments, was requesting to amend the City of Titusville Comprehensive Plan by changing the future land use designation of a 150-acre parcel known as the Royal Oak Golf Course located at Country Club Drive, south of Harrison Street and north of Knox McRae Drive. The applicant was requesting to change the Future Land Use Map (FLUM) designation from the Recreational and Conservation designations to the Low-Density Residential designation.

The State of Florida requires that any comprehensive plan amendment request which was larger than would be allowed to be considered as a small-scale comprehensive plan amendment first must be transmitted to the State for review by any relevant state agencies. If transmittal of the request was approved, the State would review the request and provide a report with any objections, recommendations, and comments to the City within 60 days. Once the State response has been received and addressed, new hearing dates would be scheduled to consider the adoption of the request with both the Planning and Zoning Commission and the City Council.

The application includes a request to rezone the property from the General Use (GU) and Open Space and Recreation (OR) districts to the Planned Development (PD) with master plan. It was anticipated adoption hearings for the comprehensive plan amendment and rezoning would be scheduled in the Spring of 2026. If adopted then the PD zoning district and master plan would govern the development of the property. The applicant was proposing to develop a residential subdivision with 511 detached single-family and townhouse lots, open space and recreation, and a redesigned stormwater system.

The applicant provided a revised concept plan on January 15, 2026, with changes to address comments received from the public during their most recent community engagement meeting. The revised plan retains the layout of the previous plan, but reduces the number of townhome units and adds a large central lake next to the Central Park and clubhouse. With this latest concept plan, the total number of proposed residential units has been reduced from 547 to 511 (a residential density

of 3.47 dwelling units per acre). The staff's report does not address the changes received on January 15th. The staff's findings and recommendations have not changed.

Community Development Director Brad Parrish reviewed the staff report and staff's recommendations to consider one of the following:

- Transmit the amendment to the State Land Planning Agency (Florida Commerce) as proposed to replace the Recreational and Conservation future land use designations with the Low Density Residential future land use designation.
- Do not Transmit the amendment and direct staff to initiate a small area study to guide the redevelopment of this area.

Kim Rezanka, of the law firm Lacey Rezanka, stated that she was speaking on behalf of the property owner and the applicant. Ms. Rezanka advised that several of her consultants would also be providing testimony, including Josh Long, American Institute Certified Planner; Bruce Moia, engineer; and James Taylor, traffic engineer.

Josh Long provided a presentation that highlighted as follows:

- Gemini Lakes CPA No. 2-2025
- Development Team
- Gemini Lakes Application
- Gemini Lakes History
- Current Proposal History
- Request
- Neighborhood Data
- Existing Land Use
- Proposed Land Use
- Urban Sprawl Analysis
- Consistency with Comprehensive Plan Future Lane Use Element (FLUE)
- January 11th – Survey Card
- What are your top 3 concerns related to the development of this property
- What are your top three items that the development team should consider implementing when designing plans for the property?
- Survey Comments (Ranked)
- Conceptual Master Plan
- Over half of the property is dedicated to open space & public benefits
- Gemini Lakes (North)
- Central Park & Central Lake
- Club House
- Dog Park
- Tot Lot
- Playground
- Exercise Parks
- Passive Parks
- Gemini Lakes (South)

- Neighborhood Connection Points (North)
- Neighborhood Connection Points (South)
- Tree Preservation
- 20’ Privacy Landscape Buffer
- 20’ Privacy Buffer
- Small Area Study
- Royal Oak Small Area Study Completed April 2016
- Gold Course Overlay
- Section 59-102.1 Intent
- Section 59-1021.3 Development Approval & Standards
- Future Land Use Element Infill Development
- Traffic Impact Analysis
- Ground Water & Soil – Regulations & Remediations
- Stormwater Treatment, Storage & Discharge
- Property Value Comparables
- About Us
- Survey Comments (Ranked)
- Recommendation

Kim Rezanka continued the presentation as follows:

- Section 34-22
- Property Owner Bill of Rights
- Questions

Kyle Bradfield, owner of the Geico office in Titusville, stated that he supported this responsible development. Mr. Bradfield stated that as a business owner, he did not have a lot of extra time to attend the City Council meeting, but he wanted to help support local business.

Rosemary Goodrich, with Title Solutions of Florida, a local title company in Titusville, stated that local title infrastructure supported projects like Gemini Lakes as they moved from approval to execution. She stated that Gemini Lakes was a thoughtful redevelopment project for Titusville that would bring new housing options, infrastructure improvements and long-term economic benefit to the community.

Cody Spaur stated that many of the people supporting this project were business owners and working families that were deeply involved in the community; therefore, they did not always have the time to attend the City Council meetings and speak on agenda items. Mr. Spaur stated that the opposition discouraged many people supporting this item from coming forward.

Scott Hudson, owner of RB Air in Titusville, stated that he was concerned with flooding in Titusville. He stated that growth was coming to Titusville and he was in support of a development project that would improve some of the drainage issues in the area.

Javier Vizcarrondo stated that he was in support of this project. He stated that this plan would revitalize the area and help increase the surrounding property values. Mr. Vizcarrondo stated that this development would help by creating improved drainage, roads, access roads and growth in the City.

Kathleen O'Rourke stated that the citizens cared deeply about stormwater protection, wildlife, historic oak trees, the Indian River Lagoon and the neighborhoods that they called home. While the development team had substantial financial resources to advance their position. Ms. O'Rourke stated that this was one of the largest land use changes proposed and it would place a new development inside an established community.

Elizabeth Parker stated that the future land use changes were not modest or flexible. She stated that a vote to change the future land use map to low density residential was not procedural or harmless, even if the zoning never changes. Ms. Parker expressed concern about stormwater and flooding, etc.

Tina Adamson stated that she lived in the Royal Oak neighborhood. She expressed concern for the proposed future land use designation and what legally permitted. Ms. Adamson stated that the development authorized by this land use change would allow fundamentally different housing from what was already in the area. Ms. Adamson was not in support of this item.

William Balint stated that he lived in the Royal Oak neighborhood area and asked the City to maintain the current land use of the former Royal Oak Golf Club and listen to the Planning and Zoning Commissions recommendation to not approve the transmittal and direct staff to conduct a small area study to guide redevelopment of the area. Mr. Balint asked City Council to prioritize the people over profit.

Seth Adams stated that he lived in the Royal Oak neighborhood and was not in support of this item. Mr. Adams stated that when considering a future land use change the council needed to consider and evaluate the worst-case development scenario that the new designation would legally allow.

Kathleen Flynn stated that she lived in the Royal Oak neighborhood and her home abutted the golf course property. She stated that according to the concept plan, there would be thirteen two story houses with single car garages directly behind her home and the other four homes on her road. Ms. Flynn stated that the proposed homes would have raised elevation leaving her home and street in a moat around a concrete jungle.

Jill Stirling discussed City owned stormwater easements on the Royal Oak golf course property that were not part of the two parcels Toulon owned. She stated that the City had legal authority over this property and had long standing legal obligations to the existing neighborhoods, including maintenance of the stormwater system. Ms. Stirling stated that the original developers of Royal Oak Golf and Country Club transferred six stormwater easements to the City of Titusville and the City accepted them in simple fee deeds.

Michael Lutter stated that he had zero confidence that the new development and stormwater plans would prevent the existing homes as well as the proposed homes from flooding in the future. Mr. Lutter stated that the proposed plan had an access road behind his home and that land was conservation land as he bought it and changing that land to a road would reduce the enjoyment of his property and damage his rights.

Rose Roach stated that the assurances from the applicant were not enough. She discussed a development in Edgewater, Florida that was approved with every procedural safeguard in place but still the outcome was catastrophic and entire neighborhoods were damaged. Ms. Roach stated that the failure did not occur because expertise was absent, it occurred because a natural system was removed and replaced.

Earl Johnson stated that he was a Royal Oak resident. He stated that he was concerned with the stormwater infrastructure because the proposed Community Development District (CDD) would own and control stormwater facilities that serve the surrounding neighborhood, including properties outside of the CDD. Mr. Johnson also expressed concern that portions of the stormwater conveyance system were owned by the City of Titusville, but the ownership had not been legally resolved.

Heather Piper discussed the tax revenue claims that were being used to promote this proposal. She stated that the developer was advertising that full buildout would generate roughly $1.4 million dollars a year for the City's general fund and if this number was going to be used to justify a permanent land use decision, then it needed to be backed by transparent and independently verified data. Ms. Piper stated that the City needed to conduct an independent fiscal impact assessment.

Vickie Conklin stated that a future land use amendment permanently authorized development intensity and could not be undone. Ms. Conklin also stated that unresolved questions remained and moving forward without a clear, enforceable and fully evaluated plan created legal and procedural risk. She advised that she was not in support of this item.

Dan Lewis stated that he was a homeowner in Royal Oak and he sent out approximately 13,000 emails to registered voters in Titusville. He stated that 6,000 people viewed the information and only two people responded that they were in support of the project. Mr. Lewis stated that he was not in support of this item.

Max Forgey stated that he was a member of the American Institute of Certified Planners for thirty-three years and he provided City Council with an expert letter. Mr. Forgey requested an additional two minutes to review his eight recommended findings in his letter.

Motion: Member Nelson moved to give Max Forgery an additional two minutes to speak. Member Stoeckel seconded the motion. The motion carried unanimously.

Max Forgey reviewed his eight recommended findings of facts.

Motion: Member Stoeckel moved to give Max Forgery an additional five minutes to speak. Member Moscoso seconded the motion. The motion carried unanimously.

Max Forgey continued reviewing his recommended findings of facts. Mr. Forgey stated that he recommended that staff not recommend approval or denial but offered an option not to transmit and to proceed to pursue further study under City supervision.

Christopher Childs stated that he was the Vice-Chairman of the Planning and Zoning Commission and he wanted to give his perspective on why he denied the item. He stated that the item was messy, especially with the applicant's lawyer stating that the simple fee deed was not a simple fee deed. He stated that the Planning and Zoning Commission did not receive the applicants plans until the day of the Planning and Zoning Commission meeting, where this item was considered. Mr. Childs stated that he was in support of the City completing a small area study on the subject property and denying this item.

Robert Headley stated that he had lived in Royal Oak for forty-one years. He stated that he was a retired licensed contractor at Kennedy Space Center and stated that if this project was built, the stormwater runoff would accelerate tremendously. Mr. Headley stated that the proposed project did not balance with the surrounding homes and he was not in support of it.

Natasha Kelley stated that she was speaking on behalf of her husband Kurt Kelley. She stated that they were new homeowners in Royal Oak and they were not in support of this item. She stated that the developer was asking the City to abandon its long-term vision, a vision that residents relied on for the stability of their homes and their environment. Ms. Kelley asked City Council to uphold the unanimous recommendation from the Planning and Zoning Commission and deny this item.

Megan McCormick stated that she lived in Royal Oak. She stated that Titusville recently created its first Urban Forest Management Plan that recognized the importance and the benefits of mature tree canopy. However, the development of this Royal Oak property removed almost all of the mature trees on the property. She stated that the proposed development would increase impervious surfaces and that would reduce water infiltration and significantly increase runoff that would make its way into the surrounding environment and the Indian River Lagoon.

Connie Milton stated that there were eight homes on Nelson Place that backed up to the golf course and the proposal would add an additional eighteen homes backing up to the already existing eight homes. She stated that the proposed development was a large intensity development and the density would be two times more than the existing community. Ms. Milton asked council to deny this item.

Michael Myjak discussed the elevation map for the Royal Oak neighborhood and stated that it was approximately thirty feet above sea level, but the proposed development was approximately thirty-five to thirty-seven feet above sea level. Mr. Myjak expressed concern about the possibility of increased flooding in the Royal Oak neighborhood if this development was approved.

Brienne Robertson stated that she was the president of the Royal Oak Community Alliance. She applauded the members of the Planning and Zoning Commission for recommending denial of the transmittal and directing staff to conduct a small area study to guide redevelopment of the area.

xxx

Mayor Connors called for a recess from 9:20 p.m. to 9:30 p.m.

xxx

AnnMarie Seidler stated that she was the president of the Association of Fairways at Royal Oak. She stated that she was speaking on behalf of the Association's Board of Directors and residents to formally enter their objection to this transmittal into the public record. She stated that their community was bordered by two ponds that they shared with the former Royal Oak Golf Course. She also stated that over time approximately twenty-five to thirty feet of their common property had been lost due to continued erosion and the gradual expansion of the pond adjacent to Konox McRae Drive.

Joey Myers stated that he was speaking for a couple attorneys that could not attend the meeting and requested five minutes to speak.

Motion: Member Stoeckel moved to give Joey Meyers five minutes to speak. Member Moscoso seconded the motion. The motion carried unanimously.

Joey Myers stated that he was speaking on behalf of Ralf Brookes, attorney board certified in City, County and local law. He stated that it was within the City Council's legal authority to not transmit and deny the applicant's proposed plan. He stated that all Comprehensive Plan Amendments were legislative decisions, which could be denied for any rational reason. He discussed multiple court cases that backed his opinions, etc. Mr. Meyers also read an email from Dennis Knox Bayar, attorney and circuit court mediator from Flagler Beach that was sent to Vickie Conklin. The email stated that transmittal of the comprehensive plan amendment was not an inconsequential action. It triggers a new level of land use entitlements for which all future zoning and land use decisions were guided by if approved. Transmittal was a significant step required before rezoning could occur and any relevant studies should be performed prior to transmittal, as recommended by Max Forgey and City planning staff.

Bryan Yarnell stated that he represented the Association of Fairways at Royal Oak. He stated that he was a lawyer with GrayRobinson. Mr. Yarnell discussed the fee simple deed from Royal Oak Development Company to the City of Titusville. Mr. Yarnell stated that it was not an easement deed; therefore, it did not have right of way usage.

xxx

Motion: Member Stoeckel moved to give Bryan Yarnell an additional three minutes to speak. Member Nelson seconded the motion. The motion carried unanimously.

xxx

Mr. Yarnell stated that the City owned the property, not the developer and that the development plan included the removal of the ponds located within the easement. He further stated that the developer did not own the easement; therefore, could not develop it.

Beryl Freeman stated that she lived on Barna Avenue and discussed multiple car accidents that occurred on her road, including someone crashing their car into her neighbor's house and hitting multiple mailboxes on her street. Ms. Freeman expressed concern about the increased traffic that would come with the addition of five hundred new homes.

Curt Kelley stated that there were many people moving to Titusville for the space industry and those people would probably not be enticed to live in this development because of their income. Mr. Kelley stated that the next developer should pursue a higher-quality project and he would be in support of it.

Laurilee Thompson stated that the City had a problem with putting too much fresh water into the Indian River Lagoon through ditches and stormwater conveyances. She stated that the city had been draining wetlands on the west side of town that were in the St. Johns River basin into the Indian River for decades. Ms. Thompson stated that St. Johns River Water Management District stated the solution to Titusville's flooding issues and too much fresh water entering the Indian River Lagoon was to build a collection of stormwater parks throughout Titusville.

Stan Johnston stated that he previously worked for the City of Titusville. He discussed the City's Stormwater Master Plan and stated that this project should be evaluated by that plan. Mr. Johnston also discussed cleaning of the canals, etc.

Jim McKnight stated that he was a professional planner and had previously served as an expert witness. He advised Council that he was representing the Fairways at Royal Oak's Association solely for the subject request. Mr. McKnight stated that he had served as a City Manager for thirty-six years and had reviewed numerous comprehensive plan amendment requests, the majority of which involved undeveloped land. He further stated that during his tenure as City Manager for the City of Rockledge, the City experienced a flooding incident that resulted in two significant policy changes: the acquisition of land for the development of active stormwater parks and revisions to drainage retention standards for new development.

Bruce Moia, engineer for the applicant, stated that he wished to clarify several items. He stated that the applicant had evaluated the properties draining into the golf course stormwater system and, following extensive research, determined that approximately 300 acres drained to the subject property, including the 150-acre project site. Mr. Moia stated that the applicant located a 1966 master drainage plan that was consistent with their findings. Mr. Moia stated that upon completion of the conceptual and final design, the applicant anticipated lowering stage elevations for neighboring properties during design storm events, thereby reducing potential impacts. He further clarified that the property did not drain into the Indian River Lagoon, but instead drained west to the St. Johns River. Mr. Moia stated that the existing stormwater system provided no treatment and that water flowing into the lakes ultimately discharged off-site into ditches and the St. Johns River. He stated that any future development of the property would be required to comply with updated standards of the Florida Department of Environmental Protection, including additional

treatment measures for nitrogen and phosphorus reduction. He further stated that the current system's primary deficiency involved two isolated lakes that were not connected to the overall system. Mr. Moia stated that the applicant proposed to interconnect all lakes and replace existing piping as part of the improvements.

Vice-Mayor Cole stated that he believed the residents from the surrounding area would feel more comfortable if the City hired an engineering firm to look into the stormwater system on the property. He suggested the contractor pay for the stormwater study that would reassure the residents.

Bruce Moia, engineer for the applicant, stated that it would be a massive study. He stated that it was typical for the applicant to prepare and submit the study, which would then be reviewed by the City and the St. Johns River Water Management District, rather than having the study recreated by the reviewing agencies.

Member Nelson asked if the new development would be three feet above the flood plain.

Bruce Moia, engineer for the applicant, stated that he could not answer that because the applicants had not completed a grading plan yet and the golf course elevation varied from seventeen feet to thirty-five feet as it undulates from north to south. He stated that based off photos they reviewed from the flooding that occurred in this area in October 2025, the stormwater currently stayed at an elevation of twenty-one feet.

Kim Rezanka, of the law firm Lacey Rezanka, stated that she was speaking on behalf of the property owner and the applicant. She responded to Vice-Mayor Cole's suggestion by stating that Kolter Land would fund the stormwater plan as proposed. Ms. Rezanka stated that a 240-page stormwater report had been included in the meeting packet and had not been addressed by residents speaking in opposition to the project. She further stated that provisions within the Comprehensive Plan, the Code of Ordinances, and Florida Statutes addressed infill development, and that the subject property met the criteria for infill. Ms. Rezanka referenced the staff report presented to the Planning and Zoning Commission at its January 21, 2026 meeting by Community Development Director Brad Parrish. Ms. Rezanka stated that the recommended action in the staff report was approval of the transmittal of the application to the State of Florida Land Planning Agency. She further stated that the City's expert, Community Development Director Brad Parrish, supported the applicant's request as outlined in the staff report.

Vice-Mayor Cole requested clarification as to whether approval of the item by the Council would result in any change to the existing land use designation or zoning classification.

Community Redevelopment Director Brad Parrish confirmed that approval of the item would not result in a change to the existing land use designation or zoning classification. Approval of this item would require staff to send the transmittal of the Comprehensive Plan Amendment Application No. 2-2025 Gemini Lakes (Royal Oak) to the State of Florida's Land Planning Agency for review.

Motion: Member Nelson moved to extend the meeting until 12:00 a.m. Vice-Mayor Cole seconded the motion. The motion carried unanimously.

Member Stoeckel asked if the Council felt that the proposed low-density residential land use was not appropriate for the subject property, then the application should not be transmitted to the State for review.

Community Redevelopment Director Brad Parrish stated that council had the option of not approving this request to transmit to the state. He recommended that council state a reason to not transmit, if that was the decision.

Member Nelson stated that her preference was to defer transmitting the application to the State at this time and instead consider conducting a small area study for the property. She emphasized the importance of ensuring that any future development on the property would be compatible with the surrounding Royal Oak neighborhood. Member Nelson expressed concern that the current plan proposed a high density of homes in a limited area, which she felt was inconsistent with the character of Royal Oak. She also noted concerns regarding the outfalls near the condominiums and the potential filling of a portion of the lake.

Member Moscoso stated that she agreed with Member Nelson and believed the City needed to do their due diligence. Member Nelson stated that Council had been discussing a stormwater management plan for the entire City, and the importance of looking at the entire City as a whole and not just a specific piece of property. Member Moscoso stated that she believed it would be very premature to transmit this item to the state.

Motion: Member Nelson moved to deny the transmittal of CPA No. 2-2025 Gemini Lakes (Royal Oak) to the State of Florida's Land Planning Agency for review and directed staff to conduct a small area study to guide the redevelopment of the area. Member Moscoso seconded the motion. The roll call vote was:

Vice-Mayor Cole	Yes
Member Stoeckel	Yes
Member Moscoso	Yes
Member Nelson	Yes
Mayor Connors	Yes

The motion carried unanimously.

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Mayor Connors called for a recess from 10:35 p.m. to 10:45 p.m.

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Small Scale Amendment (SSA) Application No. 7-2025 - 1400 Elizabeth Avenue – City Manager Abbate advised the request was to conduct the public hearing and final reading of Ordinances for Small Scale Comprehensive Plan Amendment (SSA) 7-2025.

City Attorney Treasure read the *Quasi-judicial rules of Procedures*.

Community Development Director Brad Parrish read Ordinance No. 4-2026 amending the Code of Ordinances by amending Ordinance No. 60-1988, which adopted the Comprehensive Plan of the City of Titusville, by amending the future land use designation on land located at the northwest corner of Elizabeth Avenue and Queen Street from Low Density Residential to High Density Residential on 3.61+/- acres of property having Parcel ID No. 22-35-09-02-*-7; providing for severability; repeal of conflicting ordinances; and providing for an effective date the second time by title only. (This was a legislative item.)

And, Ordinance No. 5-2026 amending Ordinance No. 5-1993 of the City of Titusville, Florida, by amending the zoning map made a part of said ordinance by reference by changing the zoning classification on land located at the northwest corner of Elizabeth Avenue and Queen Street from the Single-Family Medium Density (R-1B) zoning district to the Multifamily High Density Residential (R-3) zoning district on 3.61+/- acres of property; having Parcel ID No. 22-35-09-02-*-7; providing for severability; repeal of conflicting ordinances; and providing for an effective date the second time by title only. (This was a quasi-judicial item.)

At their regular meeting on January 7, 2026, the Planning and Zoning Commission, acting as the Local Planning Agency, recommended approval of the amendment to the Comprehensive Plan Future Land Use Map by changing the future land use designation from Low Density Residential to Medium Density Residential. Approved 7-0. The Planning and Zoning Commission also recommended approval of the rezoning from the Single-Family Medium Density (R-1B) to the Multifamily Medium Density (R-2) zoning district consistent with the Small-Scale Amendment. Approved 7-0.

Community Development Director Brad Parrish reviewed the staff report. He stated that the applicant was requesting a Small-Scale Comprehensive Plan Amendment (SSA) with rezoning on approximately 3.61+/- acres of land located at the northwest corner of the intersection of Elizabeth Avenue and Queen Street for the construction of thirty-two (32) multifamily units contained within eight (8) quadruplex buildings. The request intended to change the current future land use designation from Low Density Residential to High Density Residential and rezone the property from Single-Family Medium Density (R-1B) to Multifamily High Density Residential (R-3) to support the intended multifamily development. The property was part of the Druid Hills Subdivision, which was platted in 1927 and has since remained vacant.

A concept plan had not been provided with the request. Therefore, staff's analysis was based on the maximum potential buildout scenario. If the request was approved, the maximum potential buildout of the property would increase from eighteen (18) single-family residential units to a maximum of fifty-four (54) multifamily residential units. The amendment would allow for various multifamily residential uses, including duplexes, triplexes, quadruplexes, townhomes, or apartments provided all development standards could be met.

A right of way vacation application has been submitted (ROW No.04-2025) proposing to vacate Ziruth Avenue and Yale Street, two unimproved rights-of-way. Ziruth Avenue was located to the north of the property and runs east and west. Yale Street was located in the center of the property and runs north to south. The vacation of the proposed rights of way would potentially add 0.85+/- acres to the subject property.

Toni Shifali discussed the community meeting on Wednesday, July 23, 2025 at 9:00 a.m. at the North Brevard Senior Center. She stated that working citizens could not attend a weekday meeting at 9:00 a.m. and did not think that was right. Ms. Shifalo asked council to enforce more requirements on these developers who were required to hold community meetings.

Motion: Member Nelson moved to approve Ordinance No. 4-2026, changing the future land use designation from Low Density Residential to Medium Density Residential, as recommended by the Planning and Zoning Commission. Vice-Mayor Cole seconded the motion. The roll call vote was:

Member Stoeckel	Yes
Member Moscoso	Yes
Member Nelson	Yes
Mayor Connors	Yes
Vice-Mayor Cole	Yes

The motion carried unanimously.

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Motion: Member Nelson moved to approve the zoning from the Single-Family Medium Density Residential (R-1B) to the Multifamily Medium Density Residential (R-2), as recommended by the Planning and Zoning Commission. Member Stoeckel seconded the motion. The roll call vote was:

Member Moscoso	Yes
Member Nelson	Yes
Mayor Connors	Yes
Vice-Mayor Cole	Yes
Member Stoeckel	Yes

The motion carried unanimously.

xxx

Right of Way Vacate (ROW) No. 4-2025 Ziruth Avenue and Yale Street – City Manager Abbate advised the request was to conduct the public hearing and approve Resolution No. 3-2026 vacating, abandoning, and discontinuing certain rights of way for Yale Street and a portion of Ziruth Avenue.

On February 4, 2026, the Planning and Zoning Commission recommended approval as presented with the staff's recommended condition (1) That an easement be provided for the existing water stub out within the Ziruth Avenue right-of-way, 7-0.

An application was submitted by Jeremiah Ofori with Goldcoast Developers of Florida LLC., requesting the vacation of Yale Street and a portion of the Ziruth Avenue rights of way.

Joshua Wilson, the applicant, stated that they were satisfied with the medium density because they wanted to maintain that boundary and respect the residential community to the west. Mr. Wilson stated that the goal was to bring accessible housing to Titusville.

Motion: Member Nelson moved to approve resolution No. 3-2026 vacating, abandoning, and discontinuing certain rights of way for Yale Street and a portion of Ziruth Avenue, as recommended by staff and the Planning and Zoning Commission with the following condition: (1) That an easement be provided for the existing water stub out within the Ziruth Avenue Right-of-Way. Vice-Mayor Cole seconded the motion. The roll call vote was:

Member Nelson	Yes
Mayor Connors	Yes
Vice-Mayor Cole	Yes
Member Stoeckel	Yes
Member Moscoso	Yes

The motion carried unanimously.

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ORDINANCES-FIRST READING – None.

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OLD BUSINESS

Community Development Block Grant and Home Investment Partnership programs FY26-27 funding recommendations – City Manager Abbate advised the request was to approve funding recommendations for the 26/27 CDBG and HOME grant programs at an estimated amount of $280,000 and $115,000.

Neighborhood Services Director Terrie Franklin went over the criteria for review of the request for proposal (RFP). The RFPs have been reviewed, analyzed, and evaluated by staff utilizing Community Development Block Grant (CDBG) RFP criteria and CDBG regulatory guidance. Agencies that receive funding through the RFP process were stewards of the City's CDBG federal grant funds and assisted the Department in managing and utilizing grant funds in accordance with all applicable federal regulations, as may be amended. Because the Department [City] was ultimately responsible for compliance with the Code of Federal Regulations (CFR) for the CDBG program, all agencies considered for funding were expected to have adequate knowledge and

understanding of the CDBG program regulations and were required to perform to the same standards HUD requires of the City. These regulations included, but were not limited to, activity eligibility, client eligibility, documentation and record retention, financial management, and procurement standards.

Staff completed the evaluation process of those RFPs submitted. Additionally, during the review and analysis of the RFPs inquiries were made with each applicant regarding minimum funding levels in order to gauge program needs. As a result, the Neighborhood Services Director can recommend the following funding:

Public Services - $42,000

- $15,500 Aging Matters in Brevard for a Meals on Wheels program
- $ 6,850 Brevard Alzheimer's for a Safe Ride program
- $14,400 Women's Center for Domestic Violence Safe House program
- $ 5,000 Matthew's Hope Ministries for a Mobile Homeless Outreach program

Public Facilities and Infrastructure - $182,000

- Year 5 of the CDBG Neighborhood Revitalization Plan will focus on target area residents' requests for continued revitalization efforts including lighting, sidewalks, transportation or safety improvements.

Administration - $56,000

- Neighborhood Services Department oversight and management, and Fair Housing activities.

Motion: Member Nelson moved to approve funding recommendations for the 26/27 CDBG and HOME grant programs at an estimated amount of $280,000 and $115,000. Vice-Mayor Cole seconded the motion. The roll call vote was:

Mayor Connors	Yes
Vice-Mayor Cole	Yes
Member Stoeckel	Yes
Member Moscoso	Yes
Member Nelson	Yes

The motion carried unanimously.

xxx

Structural and Feasibility Review of Police Hall of Fame – City Manager Abbate advised the request was to provide direction into the acquisition of the Police Hall of Fame for use as the Titusville Police Headquarters and Emergency Operations Center.

It was recommended that City Council provide direction into the acquisition of the Police Hall of Fame for use as the Titusville Police Headquarters and Emergency Operations Center.

Assistant City Manager Kevin Cook provided a presentation that summarized the facility assessment report from AECOM regarding the review of the acquisition of the Police Hall of Fame.

The presentation highlighted as follows:

- City of Titusville Facility Assessment Report
- Agenda
- Introduction
- Options for Space Needs
- Parking Considerations
- Structural Conditions and Required Changes
- Rough Order of Magnitude Cost Comparison
- Pros and Cons
- Financial Analysis
- Alternatives
- Closing

Mayor Connors stated that he would not support the City of Titusville to take on this level of debt at this time. He stated that it was good exercise for the City to explore public/private partnerships.

Member Moscoso discussed that the City of Palm Bay had paid $78,000 for a comprehensive staff study conducted by the Center for Public Safety. She explained that the study analyzed call volume, patrol deployment, and minimum staffing levels, and determined the number of personnel currently needed, future staffing requirements, and necessary space needs. Member Moscoso stated that the City needed to be mindful of its actual needs and noted that if the City was not in a position to purchase the building at this time, it could consider beginning with a study to identify those needs.

Vice-Mayor Cole discussed the need for a new Police Department and City Hall but could not support the City spending this amount of money, etc.

Member Nelson stated that 7.25 acres were for sale for $2.5 million at the location currently occupied by Wild Ocean in Titusville, adjacent to the Brevard County Sheriff's Office. She indicated that the property could serve as a potential site for a new Titusville Police Department and noted that a centrally located facility would be desirable.

Council discussed a public/private partnership for financing or leasing of a building.

Member Stoeckel suggested that the City bring in an industrial engineer or consultant to assist in identifying areas where operations could be more efficient. Member Stoeckel also referenced the Council retreat as an opportunity for Council Members to establish priorities and set realistic timelines and goals regarding the aging City Hall, the Public Safety Complex, stormwater infrastructure, and other related matters.

No action was taken.

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NEW BUSINESS

Discussion – City Internal Auditor – City Manager Abbate advised that the request was to discuss the City Internal Auditor.

City Manager Abbate advised that the Internal Auditor Amelia Robinson was not present at the meeting, but she offered to meet individually with the City Council Members to review her duties, responsibilities and provide some insight as to what she does in her position as Internal Auditor.

Mayor Connors stated that he recommended designating one individual to serve as the liaison between the City Council and the Internal Auditor. Mayor Connors also recommended that no member of City Council could direct an internal audit investigation without the consent of council.

Member Nelson stated that she was in support of tabling this item until City Council could speak with the Internal Auditor, individually.

Member Stoeckel stated that she supported tabling the item until Council Members could meet individually with the Internal Auditor to have further discussion.

Member Moscoso stated that she spoke with the former Interim City Attorney Jim Stokes regarding this matter and he stated that he would email her more information from another City regarding this topic.

Motion: Member Nelson moved to postponed to the regular City Council meeting on February 24, 2026 at 6:30 p.m. Council will hold individual meetings with the City Internal Auditor prior to this meeting. Vice-Mayor Cole seconded the motion. The motion carried unanimously.

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PETITIONS AND REQUESTS FROM THE PUBLIC PRESENT (NON-AGENDA ITEMS) – None.

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MAYOR AND COUNCIL REPORTS

Mayor's Report – Mayor Connors provided his individual report.

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No additional action items.

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Council Reports –

Council provided their individual reports.

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No additional action items.

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City Managers Report – City Manager Abbate submitted his written report.

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City Manager Abbate stated that council needed to select dates for the FY 27 Budget Workshop. The primary date was August 4, 2026 at 5:00 p.m. and the secondary date was August 18, 2026 at 5:00 p.m.

Member Moscoso advised that she attended class on Wednesday nights and did not want to miss two classes, but she could miss one night of class.

Council scheduled the budget workshop and budget public hearings: Budget workshop – Tuesday, August 4, 2026 at 5:00 p.m.; First Budget Public Hearing – Wednesday, September 9, 2026 at 5:30 p.m.; and Final Budget Public Hearing – Monday, September 21, 2026 at 5:30 p.m.

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City Manager Abbate advised that traditionally, City Council implemented a summer recess by canceling the second Council meetings in June. If council desires to continue with a summer recess, it is staff's recommendation to cancel the presentation and regular meetings of June 23, 2026. This provides Council with a summer recess from June 10th until July 13th

Motion: Member Stoeckel moved to cancel the City Council meetings on Tuesday, June 23, 2026 at 5:30 p.m. (presentation meeting) and 6:30 p.m. (regular meeting) for a summer recess. Member Nelson seconded the motion. The motion carried unanimously.

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City Manager Abbate advised that as directed by Council, the draft request for proposal (RFP) for the contract award of the City's Employee Health Benefits Advisor was attached for Councils review.

Council discussed the Request for Proposal (RFP) - Employee Benefits & HR Consulting Services Proposal #CO-26-P-001/TB.

Motion: Member Stoeckel moved to direct staff to modify Section IV – Evaluation and Selection Process – Evaluation Criteria to the following: (1) Track Record of Results - 30%; (2) Qualifications of Assigned Staff to include Health Rosetta Certification – 25%; (3) Analytical, Compliance, Risk Management Capabilities – 20%; (4) Experience with Benefits Programs – 20%; and (5) Cost and Price Transparency – 5%. In addition, Council directed staff to include questions for performance components of a high-performance plan with the RFP as requested by Mayor Connors. Mayor Connors recommended including questions on whether the following items have been completed by the consulting service: (1) Transparent Advisor Relationship; (2) High Performance Plan Design Docs; (3) Risk Management; (4) Independent Active Administration; (5) Oversight; (6) Value Based Primary Care and Patient Stewardship; (7) Transparent Open Networks; (8) Direct Contracts; (9) Reference Based Pricing; (10) Major Specialties and Outlier Patients, etc. Member Nelson seconded the motion. The motion carried unanimously.

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No additional action items.

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City Attorneys Report – None.

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With no further business to discuss, the meeting adjourned at 11:57 p.m.

_____
Andrew Connors, Mayor

ATTEST:

_____
Wanda F. Wells, City Clerk

The City Council of the City of Titusville, Florida met in regular session in the Council Chamber of City Hall, 555 South Washington Avenue, on Tuesday, February 24, 2026. Mayor Connors called the City Council meeting to order at 5:30 p.m. Present were Mayor Andrew Connors, Vice-Mayor Herman A. Cole, Jr., Col USAF Retired, and City Council Members Jo Lynn Nelson, Megan Moscoso, and Dr. Sarah Stoeckel. Also present were City Manager Thomas Abbate, City Attorney Andriene Treasure, and City Clerk Wanda Wells.

Pre-recorded procedures for public comment, participation, and orderly conduct were played for all individuals that were in attendance or watching the meeting. Mayor Connors requested a moment of silence. He then led those present in the *Pledge of Allegiance to the Flag*.

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SPECIAL RECOGNITIONS & PRESENTATIONS

Employee of the Month - February 2026 - No action was requested. Finance Director Teri Butler highlighted the nomination that recognized Payroll Accountant Theresa Eftink as the City's Employee of the Month for February 2026. Mayor Connors stepped away from the dais to congratulate Ms. Eftink on being recognized for the award.

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Department Spotlight – Fire Department – No action was requested. Fire and Emergency Services Chief John Hustoles presented the 2026 Fire Department Spotlight video. Discussion briefly ensued on partnering with the hospital to purchase defibrillators, how the equipment assisted staff to improve service, the department created programs to be proactive versus reactive, etc.

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PETITIONS AND REQUESTS FROM THE PUBLIC PRESENT

Stan Johnston distributed information, which he highlighted related to concerns for his freedom of speech, the Elizabeth Oaks project not properly showing a stop sign, an incorrect street width, etc.

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David Flowers of the Meadows South Subdivision HOA requested the City's assistance to clear Third Street. The street was overgrown with vegetation and provided too much coverage to individuals that congregated in the woods causing residents to be concerned for their safety. Second, Mr. Flowers requested allowing for the removal of any type of tree located on public utility easements. At present, obtaining a tree removal permit from the City was required by Code.

Per Mayor Connors' request, Assistant City Manager Kevin Cook would follow up on Mr. Flowers' first request and report back. City Manager Abbate advised that the second concern on tree removal would be discussed with the Community Development Director.

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With no further business to discuss, the meeting adjourned at 5:51 p.m.

_____
Andrew Connors, Mayor

ATTEST:

_____
Wanda F. Wells, City Clerk

City of Titusville

"Gateway to Nature and Space"

REPORT

To: Members of the City Council

From: Thomas Abbate, City Manager

Subject: **Code Enforcement Special Magistrate**

Department/Office: City Clerk

Recommended Action:
The Code Enforcement Special Magistrate's semi-annual written report is included in the agenda packet. No action is requested.

Summary Explanation & Background:

Alternatives:

Item Budgeted:

Source/Use of Funds/Budget Book Page:

Strategic Plan:

Strategic Plan Impact:

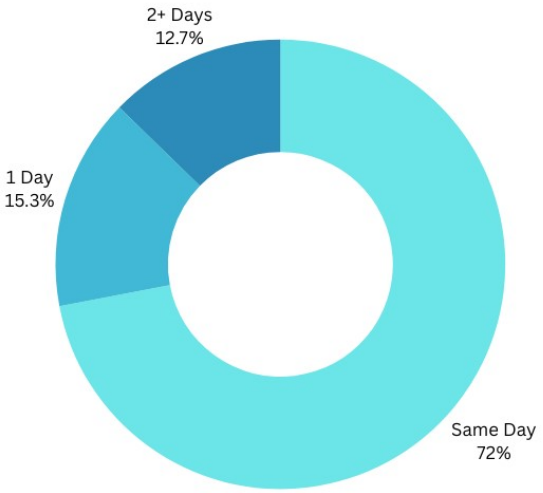
ATTACHMENTS:
1. September 2025-February 2026 Semi-Annual Report

CODE ENFORCEMENT

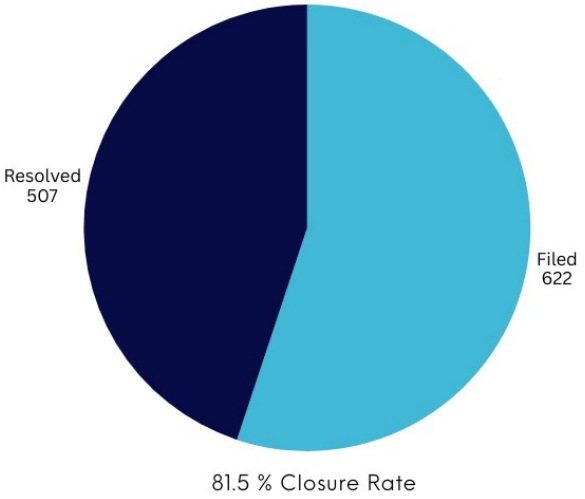
PROMOTING TEAMWORK WITHIN *Our* COMMUNITY.

Municipal Code Enforcement Special Magistrate
Semi Annual Report
September 1, 2025 - February 28, 2026

Response Time

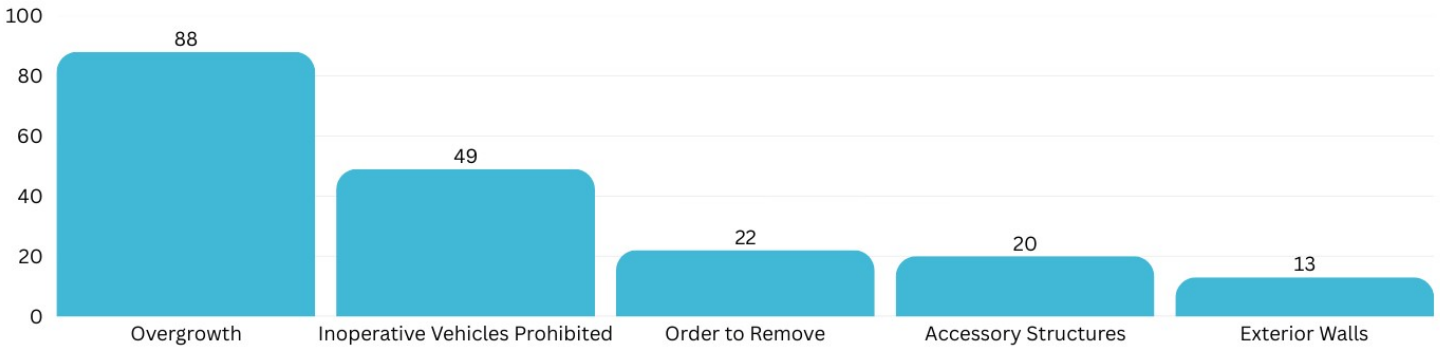


Open Cases vs. Closed Cases

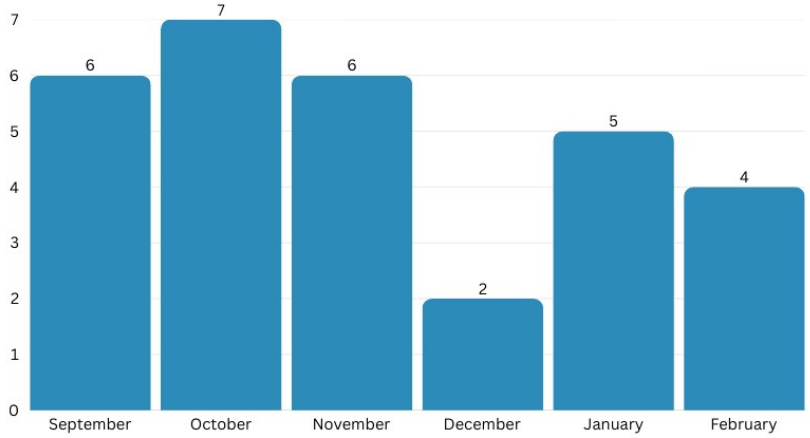


81.5 % Closure Rate

Top Five Code Violations



Special Magistrate Hearings By Month



City of Titusville

"Gateway to Nature and Space"

REPORT

To: Members of the City Council

From: Thomas Abbate, City Manager

Subject: **Planning and Zoning Commission**

Department/Office: City Clerk

Recommended Action:

Appoint four (4) regular members and one (1) alternate member to the Planning and Zoning Commission with terms to expire on January 31, 2028. **(This agenda item was tabled at the regular City Council meeting on January 29, 2026 at 6:30 p.m.)**

Summary Explanation & Background:

Planning and Zoning Commission: There are seven regular members and two alternate members appointed by City Council, as well as a non-voting member appointed by the Brevard County School Board on this Commission, which serves in an advisory capacity to the City Council in all matters relating to the Comprehensive Plan and is responsible for reviewing zoning changes and plans for all phases of the community. (Note: Members must be registered voters in the City and a resident for at least one year prior to appointment). The Commission meets twice a month on a Wednesday, the week prior to the regular City Council meetings at 6:00 p.m. at City Hall in the Council Chamber, 555 South Washington Avenue, Titusville, Florida.

The term of four (4) Regular Members Theodore Garrod, Christopher Childs, Janay Gelin, Romie Grant and one (1) Alternate Member James Troutman expired on January 31, 2026.

Regular Members Theodore Garrod, Christopher Childs and Janay Gelin have expressed their willingness and desire to continue to serve on this board as regular members for two-year terms to expire on January 31, 2028. Romie Grant has advised that he does not wish to be reappointed.

Alternate Member James Troutman has expressed his willingness and desire to serve on this board as a regular member; however, if he is not appointed as a regular member, he would like to continue serving as an alternate member and will need reappointment for a two-year term to expire on January 31, 2028.

Alternate Member AnnMarie Seidler has expressed her willingness and desire to serve on this board as a regular member; however, if she is not appointed as a regular

member, she would like to continue serving as an alternate member with a term to expire on January 31, 2027. No reappointment is necessary for Ms. Seidler to continue serving on this board as an alternate member.

In addition, there are four applications on file for consideration. Stan Johnston, Linwood (Woody) Rice, Lawrence Graham and Roger Molitor. Linwood (Woody) Rice and Lawrence Graham have expressed their willingness and desire to serve on this board as regular members with terms to expire on January 31, 2028. Stan Johnston has expressed his willingness and desire to serve on this board as a regular or alternate member with terms to expire on January 31, 2028.

Roger Molitor has an application on file for consideration. He was contacted by staff to ask if he would like to be considered as a regular or alternate member position. Staff has not received a response.

Alternatives:

Item Budgeted:

Source/Use of Funds/Budget Book Page:

Strategic Plan:

Strategic Plan Impact:

ATTACHMENTS:

1. Childs, Christopher
2. Garrod, Theodore Application
3. Gelin, Janay Boad Application
4. Seidler, AnnMarie Board Application
5. Troutman, James Board Application
6. Graham, Lawrence Board Application
7. Johnston, Stanley Board Application
8. Molitor, Roger Board Application
9. Rice, Linwood (woody) Board Application

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CITY OF TITUSVILLE
BOARDS AND COMMISSIONS
APPLICANT INFORMATION FORM

Please Type, if possible (or print clearly) **Date:**

Name: Childs Christopher L
(Last) (First) (M.I.)

Address: Home: 5627 Enchanted Ave Zip Code: 32780
Titusville FL

Business: _____ Zip Code:

Telephone: Home: _____ Business: _____ Cell: 954-778-3309

Email Address: Christopher.L.Childs@gmail.com

Employer: Self Employed

Position/Occupation: Healthcare IT Consultant How Long: 7 years

Education: Post secondary educational institutions attended:

Name & Location	Dates Attended	Degrees Earned
Vatterott College Kansas City MO	2000-2002	AOS

Professional Licenses or Certificates Held:

Title	Date Issued	Issuing Authority
EpicCare Ambulatory	5-24-2007	Epic Systems

Board(s) Preferred:

Planning and Zoning Commission, North Brevard Commission on Parks and Recreation

Please answer the following questions:

1. Are you a City of Titusville Resident? Yes X No _____
2. Are you a Registered Voter? Yes X No _____
   If yes – please give Registration Number: 1166028563 and Date of Registration: 9-5-2008
3. Are you currently serving on a City Board? Yes _____ No X
4. Have you ever served on a City Board? Yes _____ No X
   If yes, which Board and when? _____
5. How long have you lived in Titusville? 6 Years
6. Do you feel you have adequate time to devote to this board/commission membership? Yes X No _____
7. May we submit your application each time a vacancy occurs rather than phone you? Yes X No _____

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Personal/Professional References:

Name	Address	Telephone

Work Experience:

I have worked in healthcare since 2003 for some of the largest and most respected hospitals in the country.

Community Involvement:

Since running for City Council I have met and spoken with many citizens and I have volunteered to help individuals and organizations

Interests/Activities:

Me and my family love to enjoy the water, go bowling, and just enjoy local restaurants.

Why do you desire to serve on this/these Board(s)?:

I want to use my experience and knowledge to help our city

☐ **NOTE: A resume or separate sheet with additional information may be included.**

APPLICANT CERTIFICATION

By placing my signature below, I do hereby acknowledge that I understand the following:

1. This Applicant Information Form, when completed and filed with the City Clerk's Office, is a PUBLIC RECORD under Chapter 119, *Florida Statutes*, and, therefore, is open to public inspection by any person.
2. As an applicant, I am responsible for keeping the information on this form current and that any changes or updates to this form can be made by calling, faxing, writing, or visiting the City Clerk's Office.
3. As an applicant, I am aware that City and State law requires that members of certain boards file a detailed financial disclosure form.
4. This application is effective for ONE YEAR from the date of receipt by the City Clerk's Office.
5. Under the provisions of Section 2-52 of the Code of Ordinances, "Persons wishing to be considered for appointments shall file with the City Clerk's Office a statement of their interest and comply with Section 2-51, no later than five (5) days prior to the meeting at which the appointment is scheduled. The time limit in this subsection may be waived when a position on a board or commission has been open or available for appointment for a period of fifteen (15) days and there is only one (1) applicant for the position.
6. The information provided on this form is true and consent is hereby given the City Council or its designated representative to verify any and/or all information provided.

11-24-2020 — **Date Signed**

Applicant Signature

City Clerk's Office Use Only:

Date Application Received: 12/9/2020

Receipt Acknowledged By: C. Rodriguez

RETURN COMPLETED APPLICATIONS TO: City Clerk's Office, P.O. Box 2806, Titusville, FL 32781-2806, Telephone Number – 321-567-3686

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CITY OF TITUSVILLE
BOARDS AND COMMISSIONS
APPLICANT INFORMATION FORM

Please Type, if possible (or print clearly) **Date:** February 11, 2022

Name: GARROD (Last) Theodore (First) A. (M.I.)

Address: Home: 124 Park Lane Zip Code: 32780
Titusville, Florida

Business: _____ Zip Code: _____

Telephone: Home: 407-922-45191 Business: _____ Cell: 407-922-4191

Email Address: tgarrrod@cfl.rr.com

Employer: RETIRED

Position/Occupation: Retired Urban Planner How Long: 6 yrs

Education: Post secondary educational institutions attended:

Name & Location	Dates Attended	Degrees Earned
Western Kentucky University Bowling Green, KY	1973-1977	B.A.

Professional Licenses or Certificates Held:

Title	Date Issued	Issuing Authority
American Institue of Certified Planner AICP	1997	American Planning Association APA

Board(s) Preferred:
Board of Adjustment

Planning Commission

Please answer the following questions:

1. Are you a City of Titusville Resident? Yes X No _____
2. Are you a Registered Voter? Yes X No _____
   If yes – please give Registration Number: _____ and Date of Registration: _____
3. Are you currently serving on a City Board? Yes _____ No X
4. Have you ever served on a City Board? Yes _____ No X
   If yes, which Board and when? _____
5. How long have you lived in Titusville? 6 Years
6. Do you feel you have adequate time to devote to this board/commission membership? Yes x No _____
7. May we submit your application each time a vacancy occurs rather than phone you? Yes x No _____

Personal/Professional References:

Name	Address	Telephone
Olga Sanchez de Fuentes, Esq.	Kissimmee City Hall 101 Church Street, Kissimmee, FL 34741	407.518.2310
Mike Steigerwald, City Manger	Kissimmee City Hall 101 Church St, Kissimmee, FL 34741	407-518-2308,

Work Experience:

Economic Development Director City of St. Cloud Florida ; Planning Direcctor Desoto County, Mississippi

Assistant County Administer Martin County, Florida ; Zoning & Code Enforcement Director, Osceola County, Florida

Community Involvement:

Interests/Activities:

Sports Car Club of America

Why do you desire to serve on this/these Board(s)?:

Assist City of Titusville with development determination based on professional experiences.

- **NOTE: A resume or separate sheet with additional information may be included.**

APPLICANT CERTIFICATION

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2. As an applicant, I am responsible for keeping the information on this form current and that any changes or updates to this form can be made by calling, faxing, writing, or visiting the City Clerk's Office.
3. As an applicant, I am aware that City and State law requires that members of certain boards file a detailed financial disclosure form.
4. This application is effective for ONE YEAR from the date of receipt by the City Clerk's Office.
5. Under the provisions of Section 2-52 of the Code of Ordinances, "Persons wishing to be considered for appointments shall file with the City Clerk's Office a statement of their interest and comply with Section 2-51, no later than five (5) days prior to the meeting at which the appointment is scheduled. The time limit in this subsection may be waived when a position on a board or commission has been open or available for appointment for a period of fifteen (15) days and there is only one (1) applicant for the position.
6. The information provided on this form is true and consent is hereby given the City Council or its designated representative to verify any and/or all information provided.

2/11/2022
Date Signed

Applicant Signature

City Clerk's Office Use Only:

Date Application Received: 2/11/22
Receipt Acknowledged By: E. Campbell

RETURN COMPLETED APPLICATIONS TO: City Clerk's Office, P.O. Box 2806, Titusville, FL 32781-2806, Telephone Number – 321-567-3686

Board of Adjustments and Appeals

Supplemental Application

Name of Applicant: Theodore A. Garrod, AICP **Date:** 2/11/2022

If you wish to serve as a member to the Board of Adjustments and Appeals, please check the following that apply to your expertise/experience:

_____	**A licensed architect**
_____	**A licensed engineer**
_____	**A licensed landscape architect**
_____	**A licensed surveyor**
_____	**A general contractor**
_____	**A building contractor**
_____	**A person associated with the Building Trades Industries**
_____	**A person having an education degree (bachelor or master degree) in Urban Planning**
X	**A person with a current American Institute of Certified Planner Certification**
X	**A person with a minimum of ten (10) years experience in land development**
X	**A person with a minimum of ten (10) years experience in urban planning field**
_____	**Public-At-Large (No expertise/experience in any of the areas above)**

Please provide additional information regarding the expertise/experience above: _____

Supervised administration of various appointed County and City Volunteer Board, including Board Adjustment, Osceola County, Florida ; Planning Commission Desoto County Mississippi ; Economic Development Board City of St. Cloud, Florida

Theodore A. Garrod, AICP

1631 Woodbay Ct., Kissimmee, Florida 34744 · tgarrod@cfl.rr.com · Tel: 407/922-4191

Personal Statement

As a Certified Planner, I have extensive experience in positions of increasing responsibility in growth management and public administration. Excellent record of accomplishments throughout career in development, implementation and enforcement of land use regulations.

Career Objective

Central role in administration of public policy and smart growth land use regulations.

Professional Experience

Development Specialist (October 1982 - April 1987)
Board of Osceola County Commissioners, 17 South Vernon Avenue Kissimmee, Florida 34741

- Staff position responsible for analysis of all development permit applications.
- Implemented F.E.M.A Flood Insurance Program.
- Facilitated public hearings.

Zoning & Code Enforcement Director (April 1987 - November 2006)
Board of Osceola County Commissioners, 1 Courthouse Square Kissimmee, Florida 34741

- Directed administration, implementation and enforcement of land development codes and ordinances. Supervised permitting and project development review. Facilitated public hearings.
- Directed project analysis for presentation to the Board of County Commissioners; Planning Commission and Board of Adjustment. Directed case presentation to the Code Enforcement Board.
- Authored land development codes and ordinances.
- Administered drafting and implementation of Development of Regional Impact (DRI) Development Orders, including The Walt Disney Company, Celebration DRI.
- Implemented initial Code Enforcement Ordinance in Osceola County.
- Implemented initial Code Enforcement Ordinance in Osceola County.
- Established hearing procedures for the Osceola County Code Enforcement Board. Implemented Consent Agreement Orders.

Growth Management Division Administrator (November 2006 - August 2007)
Board of Osceola County Commissioners, 1 Courthouse Square Kissimmee, Florida 34741

- Interim Division Administrator during County Manager transition.
- Supervised ten departments consisting of more than 400 staff.
- Implemented ten percent annual budget reductions for Division without a reduction in force.

Impact Fee Coordinator (August 2007 - August 2009)
Board of Osceola County Commissioners, 1 Courthouse Square Kissimmee, FL. 34741

- Directed implementation and assignment of multiple impact fee assessments. Analyzed and approved alternative impact fee assessment studies. Facilitate and administer land development agreements.
- Coordinate intergovernmental development and implementation of the Educational Facilities Impact Fee Ordinance with the Osceola County School District.
- Administer professional service contracts.
- Approve alternative impact fee assessment studies.

CITY OF TITUSVILLE
BOARDS AND COMMISSIONS
APPLICANT INFORMATION FORM

Please Type, if possible (or print clearly) **Date** 12/4/2024

Name Gelin (Last) Janay (First) (M.I.)

Address: Home: 218 Coronada Blvd Titusville FL 32780 Zip Code 32780

Business _____ Zip Code: _____

Telephone: Home: _____ Business: _____ Cell 407-879-8927

Email Address: mrsgelin122@gmail.com

Employer: C2GPS - CareerSource Brevard Flagler Volusia

Position/Occupation Job Developer How Long: 2 1/2 years

Education Post secondary educational institutions attended:

Name & Location	Dates Attended	Degrees Earned
Titusville High School	2001-2006	High School Diploma

Professional Licenses or Certificates Held:

Title	Date Issued	Issuing Authority
Notary Public	3-1-2014	Florida Department of State
Florida Certified Workforce Professional	5/19/2022	

Board(s) Preferred: E.C.

~~(2) Titusville Environmental Commission~~, (5) Titusville Affordable Housing Committee,
~~(1) Not Prepared~~ Planning & Zoning Commission, (3) Advisory Committee, (4) NB Economic Development Zone

Please answer the following questions:

1	Are you a City of Titusville Resident?	Yes ✓ No ____
2	Are you a Registered Voter?	Yes ✓ No ____
	If yes – please give Registration Number: 100909479 and Date of Registration: 3-28-2005	
3	Are you currently serving on a City Board?	Yes ____ No ✓
4	Have you ever served on a City Board?	Yes ____ No ✓
	If yes, which Board and when? ____	
5	How long have you lived in Titusville? 35 Years	
6	Do you feel you have adequate time to devote to this board/commission membership?	Yes ✓ No ____
7	May we submit your application each time a vacancy occurs rather than phone you?	Yes ✓ No ____

#20

Personal/Professional References:

Name	Address	Telephone
Sally Patterson		321-215-1643
Carmen Harrell		407-860-3002
Cheraun Malone		513-609-7050

Work Experience:
Develop workforce and employment opportunities for young adults, including partnerships with businesses. Lead branding communication, and community outreach efforts for non-profits and youth sports. Coordinate programs for underserved populations.

Community Involvement:
Public Relations Director, responsible for fostering partnerships and engaging the community. Focus on community engagement and improvement initiatives Active in Bethlehem Missionary Baptist Church, serving in leadership and outreach capacities.

Interests/Activities:
Advocacy for sustainable development in our environment, Housing, economically, socially.

Why do you desire to serve on this/these Board(s)?:
To bring my expertise Strategic Planning, workforce development, community outreach. to support the growth and improvement of Titusville. My experience in developing Partnerships with local businesses and organizations aligns with the goals of these boards. I am passionate about fostering Economic growth, affordable housing, and sustainable community growth.

- **NOTE: A resume or separate sheet with additional information may be included.**

APPLICANT CERTIFICATION

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6. The information provided on this form is true and consent is hereby given the City Council or its designated representative to verify any and/or all information provided.

12/4/24 — **Date Signed**

Applicant Signature

City Clerk's Office Use Only:

Date Application Received: 12/4/24
Receipt Acknowledged By: E. Campbell

RETURN COMPLETED APPLICATIONS TO: City Clerk's Office, P.O. Box 2806, Titusville, FL 32781-2806, Telephone Number – 321-567-3686

Affordable Housing Advisory Committee

Supplemental Application

Name of Applicant: Janay Gelin Date: 12/4/24

If you wish to serve as a member to the Affordable Housing Advisory Committee, please mark the following that apply to your expertise/experience:

- ○ **One local citizen who is actively engaged in the residential home building industry in connection with affordable housing.**
- ○ **One local citizen who is actively engaged in the banking or mortgage banking industry in connection with affordable housing.**
- ○ **One local citizen who is a representative of those areas of labor actively engaged in home building in connection with affordable housing.**
- ✓ **One local citizen who is actively engaged as an advocate for low-income persons in connection with affordable housing.**
- ○ **One local citizen who is actively engaged as a for-profit provider of affordable housing**
- ○ **One local citizen who is actively engaged as a not-for-profit provider of affordable housing**
- ○ **One local citizen who is actively engaged as a real estate professional in connection with affordable housing.**
- ○ **One local citizen who actively serves on the local planning agency pursuant to s. 163.3174.**
- ○ **One local citizen who resides within the jurisdiction of the local governing body making the appointments.**
- ○ **One local citizen who represents employers within the jurisdiction.**
- ○ **One local citizen who represents essential services personnel, as defined in the Local Housing Assistance Plan (LHAP).**

Experience: Advocate for affordable Housing, actively working with underserved Populations -

Board of Adjustments and Appeals

Supplemental Application

Name of Applicant: Janay Gelin **Date:** 12/4/24

If you wish to serve as a member to the Board of Adjustments and Appeals, please check the following that apply to your expertise/experience:

_____ **A licensed architect**

_____ **A licensed engineer**

_____ **A licensed landscape architect**

_____ **A licensed surveyor**

_____ **A general contractor**

_____ **A building contractor**

_____ **A person associated with the Building Trades Industries**

_____ **A person having an education degree (bachelor or master degree) in Urban Planning**

_____ **A person with a current American Institute of Certified Planner Certification**

_____ **A person with a minimum of ten (10) years experience in land development**

_____ **A person with a minimum of ten (10) years experience in urban planning field**

✓ **Public-At-Large (No expertise/experience in any of the areas above)**

Please provide additional information regarding the expertise/experience above: Extensive experience in economic development through youth programs and employer partnerships.

JANAY GELIN

Titusville, Florida
407-879-8927 | Mrsgelin127@gmail com

Professional Summary

Dynamic professional with over 15 years of expertise in administrative leadership, healthcare coordination, workforce development, public relations, and community outreach Known for exceptional communication, organizational, and leadership skills Experienced in board governance, strategic partnership building, and program management. Active member of the Jerusalem Grand Chapter, Order of the Eastern Star, Prince Hall Affiliated, demonstrating a commitment to service and excellence

Core Competencies

Strategic Partnership Development
Public Relations and Branding
Board Governance and Leadership
Healthcare Referrals and Prior Authorizations
Workforce Programs
Community Engagement and Outreach
Event Planning and Coordination
Policy Implementation and Compliance
Advanced Proficiency in Microsoft Office and CRM Tools

Professional Experience

Job Developer Titusville, FL | May 2020 – Present

- CareerSource Brevard Flagler Volusia
- Build and sustain partnerships with employers in industries such as healthcare, aerospace, manufacturing, and technology
- Develop and implement workforce programs for young adults aged 16-24
- Create and manage outreach strategies to recruit participants and promote programs
- Collaborate with state agencies to ensure compliance and effective use of program funding
- Mentor youth to improve employability and career readiness

Public Relations Director (Non-Profit) Titusville, FL | August 2021 – Present

- Titusville Terriers Youth Sports Association
- Lead branding, communication, and marketing efforts for the association
- Manage social media presence and develop content to engage the community
- Coordinate events and foster partnerships with local businesses to support organizational goals
- Actively participate in board governance to drive the association's strategic direction

Healthcare Referrals Coordinator Brevard County, FL | June 2017 – April 2019

- Brevard Health Alliance
- Managed healthcare referrals across all specialties, ensuring timely coordination of services
- Processed prior authorizations for procedures and surgeries with accuracy and efficiency
- Collaborated with providers, patients, and insurance companies to streamline healthcare delivery
- Maintained compliance with healthcare policies and regulations, improving patient outcomes

Community Involvement

Unity Within a Community (Nonprofit)

Secretary
Foster community engagement through organized initiatives and events
Advocate for resources and opportunities for underserved populations
Bethlehem Missionary Baptist Church

Praise and Worship Leader
Lead community-focused worship services and coordinate volunteer activities
Titusville Terriers Youth Sports Association

Public Relations Director and Board Member
Direct community engagement strategies and foster partnerships to support youth sports
Jerusalem Grand Chapter, Order of the Eastern Star, Prince Hall Affiliated

Member
Active member contributing to the chapter's mission of service, leadership, and community improvement.

Board Leadership Experience

Extensive involvement in board governance across multiple organizations, contributing to strategic planning, community initiatives, and operational oversight.

Skilled in aligning organizational goals with community needs to achieve sustainable growth and impact.

Why Choose Me

My professional and community experiences have equipped me with a unique ability to lead, strategize, and implement impactful initiatives With expertise in healthcare coordination, public relations, and workforce development, I am dedicated to creating meaningful change in both professional and volunteer capacities

Campbell, Emily

From: Janay G <mrsgelin127@gmail.com>
Sent: Monday, January 13, 2025 7.50 AM
To: Campbell, Emily
Subject: Re: Titusville Environmental Commission

Good Morning Emily,

hope this message finds you well. I am writing to formally withdraw my application for the Titusville Environmental Commission. After careful consideration, I have decided to focus my attention on being considered for the other boards I have applied to.

I appreciate the opportunity and your time in reviewing my application. Please let me know if any additional information is needed regarding my interest in the other boards.

Thank you for your understanding.

Best regards,

Janay Gelin

On Tue, Jan 7, 2025 at 10:09 PM Janay G <mrsgelin127@gmail.com> wrote:
Yes, I plan to attend.

On Mon, Dec 30, 2024 at 2:42 PM Campbell, Emily <Emily.Campbell@titusville.com> wrote:

Hello,

The vacancy for the term of one regular member with a term to expire on November 30, 2025 for the Titusville Environmental Commission appointment will be heard at the regular City Council meeting on January 14, 2025 at 6:30 p.m. It was tabled at the regular City Council meeting on December 10, 2024. Your application was provided to City Council to be considered. City Council request that the applicants being considered attend the meeting and are available for questions. Please let me know if you will be attending the regular City Council meeting on January 14, 2025 at 6:30 p.m.

If you have any questions, please let me know.

Emily Campbell

Sr. Administrative Assistant

City Clerk's Office

555 South Washington Ave

Titusville FL

(321)567-3686

From: Campbell, Emily
Sent: Monday, December 9, 2024 10:18 AM
To: mrsgelin127@gmail.com
Subject: Titusville Environmental Commission

Hello,

The vacancy for the term of one regular member with a term to expire on November 30, 2025 for the Titusville Environmental Commission will be heard at the regular City Council meeting on December 10, 2024 at 6:30 p.m. in the Council Chambers at City Hall. Your application was provided to City Council to be considered. City Council request that the applicants being considered attend the meeting and are available for questions.

If you have any questions, please let me know.

Emily Campbell

Sr. Administrative Assistant

City Clerk's Office

555 South Washington Ave

Titusville FL

(321)567-3686

RECEIVED DEC 18 2024

CITY OF TITUSVILLE
BOARDS AND COMMISSIONS
APPLICANT INFORMATION FORM

Please Type, if possible (or print clearly) **Date**: December 16, 2024

Name: Seidler (Last) AnnMarie (First) (M.I.)

Address: Home: 1880 Knox McRae Drive. Unit 116E Zip Code: 32780
Titusville, FL.

Business: _____ Zip Code: _____

Telephone: Home: _____ Business: _____ Cell: 304.550.5095

Email Address: annmarieseidler@gmail.com

Employer: Joe L. Hudson General Contracting

Position/Occupation: Project Manager How Long: 12 years

Education: Post secondary educational institutions attended:

Name & Location	Dates Attended	Degrees Earned
Strayer University. Taeys Valley, West Virginia.	2017	Master of Business administration Project Management
University of Portland. Portland, Oregon	1992	Bachelor of Science and Nursing

Professional Licenses or Certificates Held:

Title	Date Issued	Issuing Authority
Criminal Justice Information Systems Security Awareness Training-level 2 CJIS Security Training 2020		

See CV for additional.

Board(s) Preferred:

Planning and Zoning Committee

Affordable Housing Advisory Committee

Please answer the following questions:

1. Are you a City of Titusville Resident? Yes x No _____
2. Are you a Registered Voter? Yes x No _____
   If yes – please give Registration Number: 125508602 and Date of Registration: 04-04-2018
3. Are you currently serving on a City Board? Yes _____ No x
4. Have you ever served on a City Board? Yes _____ No x
   If yes, which Board and when? _____
5. How long have you lived in Titusville? 8 Years
6. Do you feel you have adequate time to devote to this board/commission membership? Yes x No _____
7. May we submit your application each time a vacancy occurs rather than phone you? Yes X No _____

Personal/Professional References:

Name	Address	Telephone
Joe L. Hudson.	1890 Knox McRae Dr. 101F. Titusville, Fl. 32780.	304.550.6000
Gary Bartlett.	11343 Ashbrook Road. Canal Winchester, OH.	614.371.5309

Work Experience:

Project Manager 2005-Current

Community Involvement:

Director to now President-The Association Of Fairways at Royal Oak, Inc. Board of Directors 2017-2022, 2024.

Community Watch Volunteer-Titusville Police Department.2018-2022

Interests/Activities:

Boating, fishing, building and construction, visiting with my friends.

Why do you desire to serve on this/these Board(s)?:

I am passionate about Titusville's mission to provide essential services and improve the quality of life of our community through teamwork and leadership.

- **NOTE: A resume or separate sheet with additional information may be included.**

APPLICANT CERTIFICATION

By placing my signature below, I do hereby acknowledge that I understand the following:

1. This Applicant Information Form, when completed and filed with the City Clerk's Office, is a PUBLIC RECORD under Chapter 119, *Florida Statutes*, and, therefore, is open to public inspection by any person.
2. As an applicant, I am responsible for keeping the information on this form current and that any changes or updates to this form can be made by calling, faxing, writing, or visiting the City Clerk's Office.
3. As an applicant, I am aware that City and State law requires that members of certain boards file a detailed financial disclosure form.
4. This application is effective for ONE YEAR from the date of receipt by the City Clerk's Office.
5. Under the provisions of Section 2-52 of the Code of Ordinances, "Persons wishing to be considered for appointments shall file with the City Clerk's Office a statement of their interest and comply with Section 2-51, no later than five (5) days prior to the meeting at which the appointment is scheduled. The time limit in this subsection may be waived when a position on a board or commission has been open or available for appointment for a period of fifteen (15) days and there is only one (1) applicant for the position.
6. The information provided on this form is true and consent is hereby given the City Council or its designated representative to verify any and/or all information provided.

12-17-2024 — **Date Signed**

AnnMarie Seidler — **Applicant Signature**

City Clerk's Office Use Only:

Date Application Received: 12-18-2024

Receipt Acknowledged By: J.D.

RETURN COMPLETED APPLICATIONS TO: City Clerk's Office, P.O. Box 2806, Titusville, FL 32781-2806, Telephone Number – 321-567-3686

Affordable Housing Advisory Committee

Supplemental Application

Name of Applicant: AnnMarie Seidler Date: 12-17-2024

If you wish to serve as a member to the Affordable Housing Advisory Committee, please mark the following that apply to your expertise/experience:

- ○ **One local citizen who is actively engaged in the residential home building industry in connection with affordable housing.**
- ○ **One local citizen who is actively engaged in the banking or mortgage banking industry in connection with affordable housing.**
- ○ **One local citizen who is a representative of those areas of labor actively engaged in home building in connection with affordable housing.**
- ○ **One local citizen who is actively engaged as an advocate for low-income persons in connection with affordable housing.**
- ○ **One local citizen who is actively engaged as a for-profit provider of affordable housing**
- ○ **One local citizen who is actively engaged as a not-for-profit provider of affordable housing**
- ○ **One local citizen who is actively engaged as a real estate professional in connection with affordable housing.**
- ○ **One local citizen who actively serves on the local planning agency pursuant to s. 163.3174.**
- ● **One local citizen who resides within the jurisdiction of the local governing body making the appointments.**
- ○ **One local citizen who represents employers within the jurisdiction.**
- ○ **One local citizen who represents essential services personnel, as defined in the Local Housing Assistance Plan (LHAP).**

Experience: As a project manager I believe that affordable housing is not just about policy but also about improving the quality of life for individuals and families, and I am eager to contribute my expertise to the advisory committee.

ANNMARIE SEIDLER

1880 Knox McRae Drive 116E ▪ Titusville, Florida 32780 ▪ 304.550.5095 ▪ annmarieseidler@gmail.com

QUALIFICATIONS

With a strong background in policy development and compliance, I excel at fostering a culture of continuous improvement and operational excellence. My interactive communication skills enable seamless collaboration between staff and administration, ensuring clear expectations and shared goals. I am adept at critical thinking and problem-solving, quickly assessing challenges and implementing effective solutions. My expertise in presentation and public communication allows me to convey complex information with clarity and impact. Additionally, I have a proven ability to influence and lead teams by fostering an inclusive environment that motivates and drives success.

- Staff development & compliance
- Interactive communication skills among staff & administration
- Critical thinking/ problem solving
- Presentation & public communication
- Influencing & leading a team

EDUCATION

Master of Business Administration with an emphasis in Professional Project Management, MSCHE Accredited Program, 2017
Strayer University – Teays Valley, West Virginia

Courses Completed:

Management and Communications ▪ Strategic Leadership ▪ Financial Management ▪ Organizational Behavior ▪ Statistical Analysis ▪ Management Information Systems ▪ Managerial Economics ▪ Production/Operational Management ▪ Business Policy & Strategy Operations and Quality Management ▪ Project Risk Management

Bachelor of Science and Nursing
University of Portland – Portland, Oregon

Notable Project:

Over the past few years, I have led a dedicated team in ensuring The Association of Fairways at Royal Oak Inc. remains fully compliant with the evolving laws and regulations of the Florida Department of Business and Professional Regulation. In this capacity, I collaborate closely with a wide range of stakeholders—including renters, property owners, board members, management teams, property managers, and engineers—to foster community engagement, uphold regulatory standards, and drive the long-term sustainability of the condominium community.

My key responsibilities include overseeing property maintenance, facilitating clear communication across all parties, and leading strategic planning initiatives to enhance the association's future success. Additionally, I manage the vetting and development of project scopes, define project financials, allocate resources, and ensure the proper delegation of tasks and roles, ensuring all projects are completed on time and within budget.

PROFESSIONAL EXPERIENCE

HUDSON GENERAL CONTRACTING – Titusville, Florida
BUSINESS CONSULTANT & PROJECT MANAGER 2005-CURRENET

- As a Project Manager and Business Consultant, I played a key role in overseeing the successful execution of projects, from acquisition through completion. I conducted in-depth business analysis, providing strategic recommendations to optimize operations and achieve project goals.
- Led the acquisition of new projects, resources, and suppliers, ensuring seamless integration and alignment with company goals. Oversaw the recruitment and management of team members, ensuring that staffing needs were met to support project success.
- Performed comprehensive project analysis, including risk assessments, work breakdown structures (WBS), and the development of detailed project plans to ensure successful outcomes.

- Ensured all project work was compliant with state regulations and met customer/client specifications and quality standards.
- Built strong relationships with key team members and stakeholders, fostering a collaborative environment that promoted project success. Delivered regular status reports to stakeholders for budgeting, forecasting, and planning.
- Closely monitored project costs, schedules, and resource utilization to ensure projects were delivered on time and within budget.
- Actively resolved issues, enforced deadlines, and ensured that project teams stayed on track to meet objectives and milestones.

THE ASSOCIATION OF THE FAIRWAYS AT ROYAL OAK, INC. – Titusville, Florida
DIRECTOR TO NOW PRESIDENT 2017-CURRENT

TITUSVILLE POLICE DEPARTMENT-COMMUNITY WATCH
VOLUNTEER 2018-2022

BOLEYN AESTHETICS
CHIEF OPERATING OFFICER 2011-2013

PLEASE MAY I INC., (NON-PROFIT)
DIRECTOR/OWNER 2008-2009

NORTHWEST FORENSICS
PRESIDENT 1988-2008

AFFILIATIONS & MEMBERSHIPS

- Member of Alpha Chi National College Honor Society
- Member of Golden Key International Honor Society (top 10%)
- National Tae Kwon Do member- Black belt
- Therapy Dogs International ID#103722
- Business owner, LLC AnnMarie Seidler

Certificates & Awards

- Criminal Justice Information Systems Security Awareness Training – Level 2 CJIS Security Training- 2020
- Traffic Control Training presented by the Police Department of Titusville, Florida- 2019
- Oregon State Board of Nursing- 1992-2006
- West Virginia State Board of Nursing- 2006-2016
- Florida State Board of nursing, License Number RN949219- 2018-2020

Training

- American Sport Education Program (WVSSAC) Coaching Education Program- 2009
- Dermal fillers (Hyaluronic Acid) & hands-on training for facial aesthetic treatments- 2010

- Sclerotherapy Intensive hands-on training- 2010
- Botulinum Toxin A (Botox/Disport)- 2010
- Advanced techniques in Hyaluronic Acid and Botulinum toxin A for non-surgical facial rejuvenation- 2010

AnnMarie Seidler

AnnMarie Seidler
1880 Knox McRae Dr. 116E
Titusville, FL 32780
annmarieseidler@gmail.com
304.550.5095
December 18, 2024

Emily Campbell
City Clerk's Office
City of Titusville
555 S Washington Avenue
Titusville, FL 32796

Dear Emily Campbell,

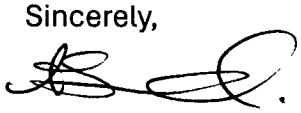
I am writing to express my interest in serving on the Planning and Zoning or the Affordable Housing Advisory Committee for the City of Titusville. As a dedicated resident with a strong commitment to community service, I am eager to contribute to the city's mission of enhancing the quality of life for its citizens through teamwork and leadership.

I am particularly drawn to the City's vision of fostering civic pride, family activities, and community service within our diverse neighborhoods. I believe that my experience in Project Management aligns well with the goals of the City of Titusville, I am confident that I can make meaningful contributions to its initiatives.

I am enthusiastic about the opportunity to collaborate with fellow board members and city officials to address the needs of our community. I am committed to upholding the city's values and working diligently to support its strategic goals and objectives.

Thank you for considering my application. I look forward to the possibility of serving our community in this capacity and contributing to the continued growth and prosperity of Titusville.

Sincerely,



AnnMarie Seidler

RECEIVED FEB 21 2025

CITY OF TITUSVILLE
BOARDS AND COMMISSIONS
APPLICANT INFORMATION FORM

Please type, if possible (or print clearly) **Date**: 2-21-25

Legal Name: Trautman (Last) James (First) B (M.I.)

Address: Home: 1705 Barna Ave. Zip Code. 32780

Business: _____ Zip Code _____

Telephone: Home: _____ Business: _____ Cell. (918)346-8907

Email Address: Trout1906@yahoo.com

Employer: Blue Origin

Position/Occupation: Non Destructive Testing (NDT) inspector How Long: 2 years

Board(s) and Commission(s) Preferred (Please rank in order of preference):

1 First Choice: Planning & Zoning

2 Second Choice: Boards of adjustments & appeals

3. Third Choice _____

Note Please complete the attached supplemental applications

Why do you desire to serve on the Board(s) indicated on your application?

Please see attached addendum.

Work Experience:

Blue Origin 2023 - Current

SpaceX 2020 - 2023

Education: Post-secondary educational institutions attended.

Name & Location	Dates Attended	Degrees Earned
Spartan College of Aeronautics	Spring 2011-Spring 2012	AOT diploma

Professional Licenses or Certificates Held:

Title	Date Issued	Issuing Authority

Community Involvement:

Planning + Zoning Meetings Twice a month, local Farmers Market.
City Council Meetings Twice a month

Are you a member or participant of any community organizations? ☐ Yes ☒ No
If yes, please provide details.

Interests/Activities:

Gardening, Scuba diving, Golfing

Personal/Professional References

Name	Address	Telephone
Ricky McBee	Cocoa FL	(757)817-9473
Dan Ryan	Mims FL	(321)289-8767

Potential Conflict of Interest:

Do you have or hold any employment or contractual relationship with any business or any agency which is subject to regulation of or is doing business with the City of Titusville?

☐ Yes ☑ No (If Yes, please provide details below)

Do you have or hold any employment or contractual relationship that will create a continuing or frequently recurring conflict between your private interests and the performance of your public duties on the board/commission or that would impede the full and faithful discharge of your public duties?

☐ Yes ☒ No (If Yes, please provide details below)

Note A resume or separate sheet with additional information may be included as part of your application.

Please answer the following questions:

1 Are you a City of Titusville Resident (Live in the City Limits)? ☒ Yes ☐ No (Staff verified E.C.)

2 How long have you lived in the City of Titusville (City Limits)? 1.75 Years

3 Are you a Registered Voter? ☒ Yes ☐ No (Staff verified E.C.)
If yes, provide Registration Number 129500729 Date of Registration. 4-16-2021

4 Are you currently serving on a City Board? ☐ Yes ☒ No

5 Have you ever served on a City Board? ☐ Yes ☒ No
If yes, which Board and when? _____

6 Do you feel you have adequate time to devote to this board/commission membership? ☒ Yes ☐ No

7 Have you ever been convicted or found guilty, regardless of adjudication, of a felony in any jurisdiction? Any plea of no contest shall be considered a conviction for purposes of this question. ☐ Yes ☒ No
If you answered Yes to Question No 7, have your civil rights been restored? ☐ Yes ☐ No

8 Are you part of a protected class that requires your personal information to be redacted from public view? ☐ Yes ☒ No

APPLICANT CERTIFICATION

By placing my signature below, I do hereby acknowledge that I understand the following:

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2. As an applicant, I am responsible for keeping the information on this form current and that any changes or updates to this form can be made by calling, faxing, writing, or visiting the City Clerk's Office.

3 As an applicant, I am aware that City and State law requires that members of certain boards file a detailed financial disclosure form.

4 The information provided on this form is true and consent is hereby given the City Council or its designated representative to verify any and/or all information provided.

5 The City Council requests all applicants be present at the City Council meeting for Council's consideration of the application for appointment.

6 If appointed to a board, committee, or commission, I acknowledge that this is my obligation and duty to comply with the following: Code of Ethics for Public Offices and Florida Sunshine Law (Florida Statutes).

7 I acknowledge and understand that if I am selected as a member of a board, commission, or committee, any written communications in any format will be a public record.

8 This application is effective for ONE YEAR from the date of receipt by the City Clerk's Office.

9 Under the provisions of Section 2-52 of the Code of Ordinances, "*Persons wishing to be considered for appointments shall file with the City Clerk's Office a statement of their interest and comply with Section 2-51, no later than five (5) days prior to the meeting at which the appointment is scheduled. The time limit in this subsection may be waived when a position on a board or commission has been open or available for appointment for a period of fifteen (15) days and there is only one (1) applicant for the position*"

2/21/25
Date Signed

Applicant's Signature

City Clerk's Office Use Only:

Date Application Received: 2/21/25

Receipt Acknowledged By: E. Campbell

RETURN COMPLETED APPLICATIONS TO:

Titusville City Clerk's Office, P.O. Box 2806, Titusville, FL 32781-2806, Telephone Number 321-567-3686

Board of Adjustments and Appeals

Supplemental Application

Name of Applicant: James Trautman **Date:** 2/21/2025

If you wish to serve as a member to the Board of Adjustments and Appeals, please check the following that apply to your expertise/experience:

_____ **A licensed architect**

_____ **A licensed engineer**

_____ **A licensed landscape architect**

_____ **A licensed surveyor**

_____ **A general contractor**

_____ **A building contractor**

_____ **A person associated with the Building Trades Industries**

_____ **A person having an education degree (bachelor or master degree) in Urban Planning**

_____ **A person with a current American Institute of Certified Planner Certification**

_____ **A person with a minimum of ten (10) years experience in land development**

_____ **A person with a minimum of ten (10) years experience in urban planning field**

X **Public-At-Large (No expertise/experience in any of the areas above)**

Please provide additional information regarding the expertise/experience above: _____

Please See attached addendum

Date Application Modified - 02-12-2025

RECEIVED FEB 21 2025

James Trautman
2/21/2025

1. Personal Statement

I am enthusiastic about the opportunity to serve on the Board of Adjustments and Appeals because I believe in the crucial role of fair and effective governance in shaping a thriving community. My background in inspections and project management has provided me with a deep understanding of regulatory frameworks, with a strong focus on ensuring compliance and safety in development. I am committed to fostering transparent communication and collaboration between community members and stakeholders, contributing to balanced and informed decision-making.

2. Relevant Experience

With over a decade of experience as a Non-Destructive Testing (NDT) Inspection Professional, I have developed a robust foundation in interpreting complex regulations and technical standards. My professional journey includes:

- Conducting inspections across various projects, ensuring adherence to safety and quality standards.
- Leading teams and managing project execution, which involves interpreting engineering drawings and specifications.
- Serving as a Quality Manager, where I oversaw audits for regulatory compliance and addressed client concerns regarding standards.

3. Knowledge of Local Regulations

While my expertise is rooted in NDT inspections, I have a solid understanding of the regulatory frameworks and compliance processes that govern development. I recognize the importance of zoning laws, land use regulations, and their impact on the community. I am committed to ensuring that all decisions made by the Board align with local standards, legal requirements, and the greater public interest.

4. Problem-Solving Skills

I have consistently demonstrated strong problem-solving abilities throughout my career, especially in complex scenarios. For instance, I have contributed to the development of innovative NDE inspection techniques, which has allowed me to analyze situations, identify root causes, and implement effective solutions to meet technical and safety challenges.

5. Community Involvement

I believe in active engagement with my community and make an effort to attend city council and planning meetings as my schedule permits. This involvement helps me stay connected to local issues, development initiatives, and the evolving needs of residents. I see this as an essential part of understanding the perspectives of both the community and stakeholders, reinforcing my commitment to ensuring our development projects reflect the desires and priorities of our residents.

6. Communication Skills
I possess advanced communication skills that enable me to engage effectively with diverse stakeholders, from technical teams to executive leadership. My experience in managing client meetings, addressing feedback, and articulating complex technical information ensures that I can foster collaboration and clarity in all my interactions.

7. Ethical Standards
Integrity, transparency, and accountability are the core values that guide my professional life. My experience in quality assurance and compliance auditing has reinforced my commitment to maintaining the highest ethical standards in all aspects of my work.

8. Vision for the Role
If selected for the Board of Adjustments and Appeals, I will champion a collaborative approach that seeks to balance development with preservation. I strongly believe in making well-informed decisions that take into account the long-term effects on our community's landscape, infrastructure, and the overall quality of life for residents.

9. References
Available upon request. I can provide references from former supervisors and colleagues who can attest to my qualifications, work ethic, and dedication to maintaining high standards of quality and safety.

10. Additional Qualifications
I hold several relevant certifications, including OSHA 10 and multiple Level II certifications in NDT methods. My experience with process evaluation and continuous improvement initiatives positions me well to contribute meaningfully to the Board's goals and objectives.

CITY OF TITUSVILLE
BOARDS AND COMMISSIONS
APPLICANT INFORMATION FORM

RECEIVED FEB 17 2026

Please type, if possible (or print clearly) **Date:** 2-13-26

Legal Name: GRAHAM (Last) LAWRENCE (First) P. (M.I.)

Address: Home: 2161 Christine Dr. Titusville, Fl. Zip Code: 32796

Business: ORANGE Plumbing, Inc. 4295 S. Hopkins Ave Titusville, Fl. Zip Code: 32780

Telephone: Home: N/A Business: 321-268-1043 Cell: 321-403-3453

Email Address: LPGORANGEPlumbing@GMAIL.COM.

Employer: ORANGE Plumbing, Inc.

Position/Occupation: President How Long: 27 Yrs.

Board(s) and Commission(s) Preferred (Please rank in order of preference):

1. First Choice: Planning & ZONING
2. Second Choice: N/A
3. Third Choice: N/A

Note: Please complete the attached supplemental applications.

Why do you desire to serve on the Board(s) indicated on your application?

1) TO SERVE MY COMMUNITY IN AN EFFECTIVE WAY.
2) USE MY Strength AS A Business Leader & Long time Resident For our Community. I will Bring Alot of Insight & Integrity to this Board.

Work Experience:

- I HAVE BEEN IN the construction, Development Business for over 40 Years. Self employed Since I WAS 24 years old.
- I HAVE BEEN Involved with Generating/Creating the State of Florida Plumbing contracting License Since 1996 to Present.

Education: Post-secondary educational institutions attended:

Name & Location	Dates Attended	Degrees Earned
Vo-Tech-(VA, MD)	1982-1983	Carpentry.

Professional Licenses or Certificates Held:

Title	Date Issued	Issuing Authority
Plumbing Contractor	1989	State of Florida
Vocational Degree Carpentry	1983	State of Maryland
Journeyman Plumber	1989	Brevard County.

Community Involvement:

Many charitable involvement via Orange Plumbing.

Are you a member or participant of any community organizations? ☒ Yes ☐ No
If yes, please provide details.

N. Brevard Rotary Evening club.

Interests/Activities:

Hunting / Fishing / RV-Camping

Community Involvement as it Presents Itself.

Personal/Professional References:

Name	Address	Telephone
Don Mount	P.O. Box 5610 Titusville, FL. 32783	321-917-5603
William Chivers	6283 Riverfront Center Blvd Titusville, Fl. 32780	321-863-5020

Potential Conflict of Interest:

Do you have or hold any employment or contractual relationship with any business or any agency which is subject to regulation of or is doing business with the City of Titusville?

☒ Yes ☐ No (If Yes, please provide details below)

Orange Plumbing, Inc. - Building Department

Do you have or hold any employment or contractual relationship that will create a continuing or frequently recurring conflict between your private interests and the performance of your public duties on the board/commission or that would impede the full and faithful discharge of your public duties?

☐ Yes ☒ No (If Yes, please provide details below)

Note: A resume or separate sheet with additional information may be included as part of your application.

Please answer the following questions:

1. Are you a City of Titusville Resident (Live in the City Limits)? ☒ Yes ☐ No (Staff verified E.C.)
2. How long have you lived in the City of Titusville (City Limits)? 26 Years
3. Are you a Registered Voter? ☒ Yes ☐ No (Staff verified EC.)
   If yes, provide Registration Number: 10103413Ø Date of Registration: 7/18/92
4. Are you currently serving on a City Board? ☐ Yes ☒ No
5. Have you ever served on a City Board? ☐ Yes ☒ No
   If yes, which Board and when? _____
6. Do you feel you have adequate time to devote to this board/commission membership? ☒ Yes ☐ No
7. Have you ever been convicted or found guilty, regardless of adjudication, of a felony in any jurisdiction? Any plea of no contest shall be considered a conviction for purposes of this question ☐ Yes ☒ No
   If you answered Yes to Question No. 7, have your civil rights been restored? ☐ Yes ☐ No
8. Are you part of a protected class that requires your personal information to be redacted from public view? ☐ Yes ☒ No

APPLICANT CERTIFICATION

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5. The City Council requests all applicants be present at the City Council meeting for Council's consideration of the application for appointment.
6. If appointed to a board, committee, or commission, I acknowledge that this is my obligation and duty to comply with the following: Code of Ethics for Public Offices and Florida Sunshine Law (Florida Statutes).
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2-13-2026 **Date Signed**

Applicant's Signature

City Clerk's Office Use Only:

Date Application Received: 2/17/26

Receipt Acknowledged By: E.Campbell

RETURN COMPLETED APPLICATIONS TO:

Titusville City Clerk's Office, P.O. Box 2806, Titusville, FL 32781-2806, Telephone Number 321-567-3686

RECEIVED JAN 28 2025

CITY OF TITUSVILLE
BOARDS AND COMMISSIONS
APPLICANT INFORMATION FORM

Please Type, if possible (or print clearly) **Date:** Jan. 28, 2025

Name: Johnston (Last) Robert (First) S. (Stanley) (M.I.)

Address: Home: 860 Poinsettia Ave Titusville, FL Zip Code: 32796

Business: Same Zip Code: _____

Telephone: Home: 321-267-7343 Business: Same Cell: ——

Email Address: guindobj1@aol.com

Employer: self-employed

Position/Occupation: Stan Johnston, PE How Long: ~48 yrs

Education: Post secondary educational institutions attended:

Name & Location	Dates Attended	Degrees Earned
BCC, Brev. Cty	~1972-2006	NONE
ETU, Orlando	~1972	NONE
W. V. Inst. of Tech	~1969-1971	B.S. in Civil Engineering

Professional Licenses or Certificates Held:

Title	Date Issued	Issuing Authority
Professional Engineer	1976-2023 (or 2022)	FBPE
Professional Surveyor (Inactive license)	~~2023 (or 2022)~~ ~1981-2023 (or 2022)	State

Board(s) Preferred:
TEC & PSZ

Please answer the following questions:

1. Are you a City of Titusville Resident? (Yes) No
2. Are you a Registered Voter? (Yes) No
   If yes – please give Registration Number: 100925229 and Date of Registration: 1973
3. Are you currently serving on a City Board? Yes (No)
4. Have you ever served on a City Board? Yes (No)
   If yes, which Board and when? _____
5. How long have you lived in Titusville? ~53 Years
6. Do you feel you have adequate time to devote to this board/commission membership? (Yes) No
7. May we submit your application each time a vacancy occurs rather than phone you? (Yes) No

Personal/Professional References:

Name	Address	Telephone
See Attached letter		

Work Experience:

Professional Engr. & Professional Surveyor for City of Titusville 2001-2006

" " " & Inspector, Consultant ~10 yrs

~~Work~~ Professional Engr, self employed 1976-present; Navy Veteran

Community Involvement:

IRC Car Care Ministry; Prayer Mtgs/Bible Study Groups; Chairman many years; PTO Pres. South Lake Elementary; ~~Sch~~ South Lake Cubmaster; Treas. Combined Polish Relief; Fight 4Zero environmental group; Sierra Club; Right to Clean Water;

Interests/Activities: Speak Up Titusville; SEE ATTACHED LETTER FOR MORE Family; Church; swimming miles at the YMCA; biking; boogie barding; ripstik; loving a good Pawny; pleasing my wonderful wife Quin & SEE ATTACHED LETTER FOR MORE

Why do you desire to serve on this/these Board(s)?:

Please see the attached letter for my reasons & more qualifications.

- **NOTE: A resume or separate sheet with additional information may be included.**

APPLICANT CERTIFICATION

By placing my signature below, I do hereby acknowledge that I understand the following:

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6. The information provided on this form is true and consent is hereby given the City Council or its designated representative to verify any and/or all information provided.

1/28/25 — **Date Signed**

Dan Clements — **Applicant Signature**

City Clerk's Office Use Only:

Date Application Received: 1/28/25

Receipt Acknowledged By: E.Campbell

RETURN COMPLETED APPLICATIONS TO: City Clerk's Office, P.O. Box 2806, Titusville, FL 32781-2806, Telephone Number – 321-567-3686

Denman, Debra

From:	Stan Johnston <guindolaj1@aol.com>
Sent:	Thursday, February 20, 2020 2:06 PM
To:	Denman, Debra; Wells, Wanda; Larese, Scott; Johnson, Walt; Diesel, Dan; Stoeckel, Sarah; Jordan, Robert; Forward - Robert Jordan; Nelson, JoLynn
Subject:	Addendum Adding Shawn Williams and Scott Ellis as References to My Application to the City of Titusville to Serve on the Planning and Zoning Commission

February 20, 2020

To: Debra Denman, Wanda Wells, City Manager, Council Members
From: Stan Johnston, PE, (321) 267-7343
Copy to: Others
Subject: Addendum Adding Shawn Williams and Scott Ellis as References to My Application to the City of Titusville to Serve on the Planning and Zoning Commission

Dear All,

I wish to continue my service to my hometown and local community. Presently I have the following references for my application to serve my hometown Titusville community:

1. Mr. Emmett Larson, PhD, a distinguished, retired math instructor of Brevard Community College and resident of Titusville for many years (tel. 321-267-7343)
2. Ms. Billie Fitzgerald, an honorable longtime resident, Hospital Board Member, and real estate agent; and (tel. 321-652-4940)
3. Mr. Richard Votapka, PE, former distinguished engineer employed by city for over ten years and city retiree (tel 772-589-8611)

This addendum adds the following references:

4. Mr. Scott Ellis, present Clerk of Courts, Brevard County known for his exposure of corruption of Mitch Needleman, former Clerk or Courts; telephone (321) 637-2017
5. Mr. Shawn Williams, having served on the P&Z Committee for 18 years; telephone (321) 537-2016

My qualifications include the following: (current inactive PLS license)

Titusville resident beginning 1971; five generations of family calling Titusville "Home"; registered PE (Professional Engineer) since 1976; registered PLS, (Professional Land Surveyor) since 1980; retired engineer from city in 2008; and a veteran (US Navy) in a family of many veterans (Army, Air Force, Navy, Marines, and National Guard) several of whom served in WW II.

I am a former President of Cape Canaveral Branch American Society of Civil Engineers; former Treasurer of Combined Polish Relief (CPR) and Titusville Soest Poland (TSP); former Co-Chairman of West Virginia Day at Fox Lake Park for more than a dozen years; member of Concerned Citizens of Titusville for more than a dozen years; and a member of the Tau Beta Pi Engineering Honorary Society.

My wonderful wife and I have been married since 1974 and we raised our four children here.

Please add these references to my application. .

Thank you,

Stan Johnston, PE

CITY OF TITUSVILLE
BOARDS AND COMMISSIONS
APPLICANT INFORMATION FORM

RECEIVED FEB 17 2026

Please type, if possible (or print clearly) **Date:** February 16, 2026

Legal Name: Molitor (Last) Roger (First) J (M.I.)

Address: Home: 5417 Riveredge Drive, Titusville, Florida Zip Code: 32780

Business: _____ Zip Code: _____

Telephone: Home: _____ Business: _____ Cell: 321 482 3300

Email Address: rogerm1001@gmail.com

Employer: Retired

Position/Occupation: Retired How Long: 5 Years

Board(s) and Commission(s) Preferred (Please rank in order of preference):

1. First Choice: Planning and Zoning
2. Second Choice: _____
3. Third Choice: _____

Note: Please complete the attached supplemental applications.

Why do you desire to serve on the Board(s) indicated on your application?

As the owner of Romar Homes a now closed business, I built hundreds of affordable houses in Brevard County. I would hope that I can bring some of that knowledge to affordable housing.

Work Experience:

50 years in construction, development and real estate.

Education: Post-secondary educational institutions attended:

Name & Location	Dates Attended	Degrees Earned
Iowa State University	August 1967 thru May 1971	B.S.

Professional Licenses or Certificates Held:

Title	Date Issued	Issuing Authority
Florida Real Estate Broker		State of Florida
Florida Certified General Contractor	1983	State of Florida

Community Involvement:

Past member of the Titusville Cocoa Airport Authority.

Are you a member or participant of any community organizations? ☐ Yes ☑ No
If yes, please provide details.

Interests/Activities:

Flying Private Aircraft. Boating the Indian River

Personal/Professional References:

Name	Address	Telephone
Albert Voss	3093 Green Turtle Key, Mims, Fl.	321 698 1304
Kevin Daugherty	1 Bristow Way Titusville Fl 3278	321 267 8780

Potential Conflict of Interest:

Do you have or hold any employment or contractual relationship with any business or any agency which is subject to regulation of or is doing business with the City of Titusville?

☐ Yes ☒ No (If Yes, please provide details below)

Do you have or hold any employment or contractual relationship that will create a continuing or frequently recurring conflict between your private interests and the performance of your public duties on the board/commission or that would impede the full and faithful discharge of your public duties?

☐ Yes ☒ No (If Yes, please provide details below)

Note: A resume or separate sheet with additional information may be included as part of your application.

Please answer the following questions:

1. Are you a City of Titusville Resident (Live in the City Limits)? ☑ Yes ☐ No (Staff verified E.C.)
2. How long have you lived in the City of Titusville (City Limits)? 19 Years
3. Are you a Registered Voter? ☑ Yes ☐ No (Staff verified E.C.)
   If yes, provide Registration Number: 101017771 Date of Registration: March 1988 3/22/88
4. Are you currently serving on a City Board? ☐ Yes ☑ No
5. Have you ever served on a City Board? ☑ Yes ☐ No
   If yes, which Board and when? TICO Airport Authority 2019 thru 2025
6. Do you feel you have adequate time to devote to this board/commission membership? ☑ Yes ☐ No
7. Have you ever been convicted or found guilty, regardless of adjudication, of a felony in any jurisdiction? Any plea of no contest shall be considered a conviction for purposes of this question. ☐ Yes ☑ No

   If you answered Yes to Question No. 7, have your civil rights been restored? ☐ Yes ☐ No
8. Are you part of a protected class that requires your personal information to be redacted from public view? ☐ Yes ☑ No

APPLICANT CERTIFICATION

By placing my signature below, I do hereby acknowledge that I understand the following:

1. This Applicant Information Form, when completed and filed with the City Clerk's Office, is a PUBLIC RECORD under Chapter 119, *Florida Statutes*, and, therefore, is open to public inspection by any person.
2. As an applicant, I am responsible for keeping the information on this form current and that any changes or updates to this form can be made by calling, faxing, writing, or visiting the City Clerk's Office.
3. As an applicant, I am aware that City and State law requires that members of certain boards file a detailed financial disclosure form.
4. The information provided on this form is true and consent is hereby given the City Council or its designated representative to verify any and/or all information provided.
5. The City Council requests all applicants be present at the City Council meeting for Council's consideration of the application for appointment.
6. If appointed to a board, committee, or commission, I acknowledge that this is my obligation and duty to comply with the following: Code of Ethics for Public Offices and Florida Sunshine Law (Florida Statutes).
7. I acknowledge and understand that if I am selected as a member of a board, commission, or committee, any written communications in any format will be a public record.
8. This application is effective for ONE YEAR from the date of receipt by the City Clerk's Office.

9. Under the provisions of Section 2-52 of the Code of Ordinances, "*Persons wishing to be considered for appointments shall file with the City Clerk's Office a statement of their interest and comply with Section 2-51, no later than five (5) days prior to the meeting at which the appointment is scheduled. The time limit in this subsection may be waived when a position on a board or commission has been open or available for appointment for a period of fifteen (15) days and there is only one (1) applicant for the position*".

2-16-26 _____
Date Signed

_____
Applicant's Signature

City Clerk's Office Use Only:

Date Application Received: 2/17/26

Receipt Acknowledged By: E. Campbell

RETURN COMPLETED APPLICATIONS TO:

Titusville City Clerk's Office, P.O. Box 2806, Titusville, FL 32781-2806, Telephone Number 321-567-3686

RECEIVED FEB 17 2026

CITY OF TITUSVILLE
BOARDS AND COMMISSIONS
APPLICANT INFORMATION FORM

Please type, if possible (or print clearly) **Date:** 2/17/2026

Legal Name: Rice (Last) Linwood (Woody) (First) V (M.I.)

Address: Home: 505 Indian River Avenue, Titusville, Florida Zip Code: 32796

Business: EPIC Consultants of Florida LLC, 505 Indian River Avenue, Titusville, Florida Zip Code: 32796

Telephone: Home: 321-427-0251 Business: 321-427-0251 Cell: 321-427-0251

Email Address: WoodyR.pz@gmail.com

Employer: EPIC Consultants of Florida LLC

Position/Occupation: Civil Engineer / Owner How Long: 12 years

Board(s) and Commission(s) Preferred (Please rank in order of preference):

1. First Choice: Planning and Zoning
2. Second Choice:
3. Third Choice:

Note: Please complete the attached supplemental applications.

Why do you desire to serve on the Board(s) indicated on your application?

Community Service is the backbone of local government. The most important think is having qualified individuals with different backgrounds that can make sound recommendations to the governing body.

Work Experience:

Currently civil engineer (P.E. Certified) that designs and permits development projects in the local area. Some of my past work experience includes, City Engineer, Retail Business in Titusville, NASA, Lockheed, and Valero Energy Corp. While at the City (City Engineer) I was the Director overseeing, Development Services, BTR, Code Enforcement and Building. I was responsible for hiring staff, budgets, LDR enforcement, code revision recommendations, Flood Plain Management, and other duties as directed by the City Manager.

Education: Post-secondary educational institutions attended:

Name & Location	Dates Attended	Degrees Earned
University of Florida (Gainesville)	Fall of 1876 - August 1981	BSME (Mechanical Engineer)

Professional Licenses or Certificates Held:

Title	Date Issued	Issuing Authority
Professional Engineer	07/13/1995	State of Florida
Civil Engineering Exam		

Community Involvement:

I have served in many community roles such as: City Council, TDC, Chamber, P&Z, TEC, CRA, CRB,

Are you a member or participant of any community organizations? ☒ Yes ☐ No
If yes, please provide details.

Grove Church

Interests/Activities:

Wood Working, Family, and Theology

Personal/Professional References:

Name	Address	Telephone
Kris Harvey	1545 Silk Oak Avenue, Titusville, FL	321-505-6472
Robin Fisher	1019 Indian River Ave, Titusville, FL	321-543-3362

Potential Conflict of Interest:

Do you have or hold any employment or contractual relationship with any business or any agency which is subject to regulation of or is doing business with the City of Titusville?

☒ Yes ☐ No (If Yes, please provide details below)

My business is an engineering company that permits site development project through local, county and state agencies

Do you have or hold any employment or contractual relationship that will create a continuing or frequently recurring conflict between your private interests and the performance of your public duties on the board/commission or that would impede the full and faithful discharge of your public duties?

☒ Yes ☐ No (If Yes, please provide details below)

As stated above my business is an engineering company that permits site development project through local, county and state agencies. I am currently semi-retired and will continued to provide services for one or two projects a year. My business partner only works on one project and has been on that project for 3 or more years. I would abstain from voting on any project that would create a conflict of interest and request an alternate member represent the City on those project.

Please answer the following questions:

1. Are you a City of Titusville Resident (Live in the City Limits)? ☒ Yes ☐ No (Staff verified E.C.)
2. How long have you lived in the City of Titusville (City Limits)? 50 Years
3. Are you a Registered Voter? ☒ Yes ☐ No (Staff verified E.C.)
   If yes, provide Registration Number: 100933141 Date of Registration: 06/17/1975
4. Are you currently serving on a City Board? ☐ Yes ☒ No
5. Have you ever served on a City Board? ☒ Yes ☐ No
   If yes, which Board and when? CRB-1989, City Council 1990-1994, TEC 2021, P&Z 2021-2022 FYI, These dates are approximate and may deviate.
6. Do you feel you have adequate time to devote to this board/commission membership? ☒ Yes ☐ No
7. Have you ever been convicted or found guilty, regardless of adjudication, of a felony in any jurisdiction? Any plea of no contest shall be considered a conviction for purposes of this question. ☐ Yes ☒ No
   If you answered Yes to Question No. 7, have your civil rights been restored? ☐ Yes ☐ No
8. Are you part of a protected class that requires your personal information to be redacted from public view? ☐ Yes ☒ No

APPLICANT CERTIFICATION

By placing my signature below, I do hereby acknowledge that I understand the following:

1. This Applicant Information Form, when completed and filed with the City Clerk's Office, is a PUBLIC RECORD under Chapter 119, *Florida Statutes*, and, therefore, is open to public inspection by any person.
2. As an applicant, I am responsible for keeping the information on this form current and that any changes or updates to this form can be made by calling, faxing, writing, or visiting the City Clerk's Office.
3. As an applicant, I am aware that City and State law requires that members of certain boards file a detailed financial disclosure form.
4. The information provided on this form is true and consent is hereby given the City Council or its designated representative to verify any and/or all information provided.
5. The City Council requests all applicants be present at the City Council meeting for Council's consideration of the application for appointment.
6. If appointed to a board, committee, or commission, I acknowledge that this is my obligation and duty to comply with the following: Code of Ethics for Public Offices and Florida Sunshine Law (Florida Statutes).
7. I acknowledge and understand that if I am selected as a member of a board, commission, or committee, any written communications in any format will be a public record.
8. This application is effective for ONE YEAR from the date of receipt by the City Clerk's Office.

9. Under the provisions of Section 2-52 of the Code of Ordinances, "*Persons wishing to be considered for appointments shall file with the City Clerk's Office a statement of their interest and comply with Section 2-51, no later than five (5) days prior to the meeting at which the appointment is scheduled. The time limit in this subsection may be waived when a position on a board or commission has been open or available for appointment for a period of fifteen (15) days and there is only one (1) applicant for the position*".

02/17/2026
Date Signed

Applicant's Signature

City Clerk's Office Use Only:

Date Application Received: 2/17/26

Receipt Acknowledged By: E. Campbell

RETURN COMPLETED APPLICATIONS TO:

Titusville City Clerk's Office, P.O. Box 2806, Titusville, FL 32781-2806, Telephone Number 321-567-3686

City of Titusville

"Gateway to Nature and Space"

REPORT

To: Members of the City Council

From: Thomas Abbate, City Manager

Subject: **Student Advisory Council Scholarship Policy Expenditure**

Department/Office: City Clerk

Recommended Action:

Approve Titusville Student Advisory Council Scholarship Policy expenditure not to exceed $1,250 and direct staff to forward pending disbursement forms to the City Manager and Finance Department, for the preparation of two individual scholarship checks, as prescribed by the policy. Pending this request, the scholarships will be awarded at the regular City Council meeting on April 28, 2026 (6:30 p.m.).

Summary Explanation & Background:

On March 10, 2009, City Council approved and implemented the Titusville Student Advisory Council (TSAC) Scholarship Award Policy. This policy was amended for various housekeeping reasons in 2014, 2017, and 2019. The current policy provides for City Council to award a scholarship in the amount of $250 for each year that a student actively participates on the Titusville Student Advisory Council (TSAC). The policy also requires at least 75% attendance of regular and special meetings during each term (August through April) by the student. The maximum expenditure/cost is $3,000 per year, with a total scholarship not to exceed $1,000 per member. Additionally, scholarships are awarded to graduating senior student(s) during the same meeting in which the Titusville Student Advisory Council presents their annual report in April.

For the 2025/2026 term, two (2) TSAC graduating seniors are scheduled to receive scholarships in accordance with the policy guidelines. Cadyn Fiebig is eligible for a $750 scholarship award for the 2022/2023, 2023/2024 and 2024/2025 terms. Peyton Redfern is eligible for a $500 scholarship award for the 2024/2025 and 2025/2026 terms.

Staff is requesting Council to approve the Student Advisory Council scholarship expenditure, not to exceed $1,250, and direct staff to forward pending scholarship disbursement forms to the City Manager for his release/authorization, in order that the individual checks may be requested from the Finance Department.

Pending Council' s approval of this expenditure, the scholarships will be awarded during the regular City Council meeting on April 28, 2026 (6:30 p.m.).

Alternatives:

Item Budgeted:
Yes

Source/Use of Funds/Budget Book Page:
Other Charges and Obligations - 001-0501-511.49-01

Strategic Plan:

Strategic Plan Impact:

ATTACHMENTS:
1. PR Scholarship
2. CF Scholarship 2

Memorandum

TO: Thomas Abbate, City Manager TAA 23 FEB 26

FROM: Emily Campbell, City Clerk's Office EC.

DATE: February 18, 2026

SUBJECT: Student Advisory Council Scholarship Award Policy

The attached Student Advisory Council Scholarship Award request for disbursement is being submitted for **your consideration** and approval.

The following graduating senior and Student Advisory Council (SAC) member has tentatively qualified for a scholarship and has submitted his application prior to March 1, 2021. Her name, years of qualified service on SAC, and scholarship amount is as follows:

Peyton Redfern
Years of Qualified Service on SAC: 2024/2025 2025/2026
Scholarship Amount Request: $500

Attached is one (1) Student Advisory Council Member Annual Qualification Statements of Peyton's for your consideration.

Regarding the remainder of the current 2025/2026 term, seven (7) meetings have transpired, and she has attended six (6). There will be two (2) additional meetings before the current term officially ends. Although we do not anticipate any issues, we will notify you if Peyton's current attendance falls below 75% during the remainder of the 2025/2026 term.

If possible, please respond to our office by March 2, 2026, so that we may prepare a report to Council (expenditure request) for the March 10, 2026, City Council meeting.

Please let us know if you have any questions. Thank you.

STUDENT ADVISORY COUNCIL SCHOLARSHIP AWARD
REQUEST FOR SCHOLARSHIP DISBURSEMENT

Date: 2/18/26

Name of Student: Peyton Redfern

Social Security Number (mandatory): [redacted]

Mailing Address: [redacted]

Contact Telephone Number: [redacted]

Scholarship Amount Request: $ 500

SAC Membership Years: 24-25 25-26 _____ _____

(Annual attesting forms from staff liaison MUST be attached)

Approved for disbursement:

[signature]

Signature of City Manager

23 FEB 26

Date

STUDENT ADVISORY COUNCIL SCHOLARSHIP AWARD
MEMBER ANNUAL QUALIFICATION STATEMENT

Member Name: Peyton Redfern

Membership Year: 2024/2025

No. of Meetings: 10 **No. Attended:** 8 **Percentage:** 80% **(Min. 75% required)**

No. of City Council authorized absences: n/a **and dates:**_____

Actively participated in projects/events during the year: (Y) N

Concurrence: E. Campbell _____ **or** _____
Staff Liaison **School Advisor**

Exhibited cooperative, enthusiastic, respectful attitude: (Y) N

Concurrence: E. Campbell _____ **or** _____
Staff Liaison **School Advisor**

Student Advisory Council member has met the scholarship award requirements for the membership year noted.

ATTEST:

E. Campbell _____ 4/15/25 _____
Signature of Staff Liaison **Date**

Memorandum

23 FEB 26

TO: Thomas Abbate, City Manager

FROM: Emily Campbell, City Clerk's Office EC.

DATE: February 18, 2026

SUBJECT: Student Advisory Council Scholarship Award Policy

The attached Student Advisory Council Scholarship Award request for disbursement is being submitted for **your consideration** and approval.

The following graduating senior and Student Advisory Council (SAC) member has tentatively qualified for a scholarship and has submitted his application prior to March 1, 2021. Her name, years of qualified service on SAC, and scholarship amount is as follows:

Cadyn Fiebig
Years of Qualified Service on SAC: 2022/2023 2023/2024 2024/2025
Scholarship Amount Request: $750

Attached is three (3) Student Advisory Council Member Annual Qualification Statements of Cadyn's for your consideration.

Regarding the remainder of the current 2025/2026 term, seven (7) meetings have transpired, and she has attended four (4). There will be two (2) additional meetings before the current term officially ends. Cadyn has not met the scholarship award requirements for the membership year 2025/2026 as noted.

If possible, please respond to our office by March 2, 2026, so that we may prepare a report to Council (expenditure request) for the March 10, 2026, City Council meeting.

Please let us know if you have any questions. Thank you.

STUDENT ADVISORY COUNCIL SCHOLARSHIP AWARD
REQUEST FOR SCHOLARSHIP DISBURSEMENT

Date: 2/18/26

Name of Student: Cadyn Fiebig

Social Security Number (mandatory): [redacted]

Mailing Address: [redacted]

Contact Telephone Number: [redacted]

Scholarship Amount Request: $ 750

SAC Membership Years: 22-23 23-24 24-25 _____
(Annual attesting forms from staff liaison MUST be attached)

Approved for disbursement:

_____ 23FEB26
Signature of City Manager **Date**

STUDENT ADVISORY COUNCIL SCHOLARSHIP AWARD
MEMBER ANNUAL QUALIFICATION STATEMENT

Member Name: Caydn Fiebig

Membership Year: 2022/2023

No. of Meetings: 12 **No. Attended:** 11 **Percentage:** 92% **(Min. 75% required)**

No. of City Council authorized absences: n/a **and dates:**_____

Actively participated in projects/events during the year: (Y) N

Concurrence: _____ **or** _____
Staff Liaison **School Advisor**

Exhibited cooperative, enthusiastic, respectful attitude: (Y) N

Concurrence: _____ **or** _____
Staff Liaison **School Advisor**

Student Advisory Council member has met the scholarship award requirements for the membership year noted.

ATTEST:

E. Campbell 5/11/23
Signature of Staff Liaison **Date**

STUDENT ADVISORY COUNCIL SCHOLARSHIP AWARD
MEMBER ANNUAL QUALIFICATION STATEMENT

Member Name: Caydn Fiebig

Membership Year: 2023/2024

No. of Meetings: 9 **No. Attended:** 8 **Percentage:** 89% **(Min. 75% required)**

No. of City Council authorized absences: n/a **and dates:**_____

Actively participated in projects/events during the year: (Y) N

Concurrence: E. Campbell **or** _____
Staff Liaison **School Advisor**

Exhibited cooperative, enthusiastic, respectful attitude: (Y) N

Concurrence: E. Campbell **or** _____
Staff Liaisbn **School Advisor**

Student Advisory Council member has met the scholarship award requirements for the membership year noted.

ATTEST:

E. Campbell 4/9/24
Signature of Staff Liaison **Date**

STUDENT ADVISORY COUNCIL SCHOLARSHIP AWARD
MEMBER ANNUAL QUALIFICATION STATEMENT

Member Name: Caydn Fiebig

Membership Year: 2024/2025

No. of Meetings: 10 **No. Attended:** ~~9~~ 8 **Percentage:** ~~90%~~ 80% **(Min. 75% required)**

Did not attend 4/15/25 meeting. E.C.

No. of City Council authorized absences: n/a **and dates:** _____

Actively participated in projects/events during the year: (Y) N

Concurrence: E. Campbell **or** _____
Staff Liaison **School Advisor**

Exhibited cooperative, enthusiastic, respectful attitude: (Y) N

Concurrence: E. Campbell **or** _____
Staff Liaison **School Advisor**

Student Advisory Council member has met the scholarship award requirements for the membership year noted.

ATTEST:

E. Campbell _____ 4/15/25 _____
Signature of Staff Liaison **Date**

City of Titusville

"Gateway to Nature and Space"

REPORT

To: Members of the City Council

From: Thomas Abbate, City Manager

Subject: **Contract with Edgewater Group LLC for Professional Engineering Design Services for Titusville Marina Hurricane Repair Project**

Department/Office: Public Works

Recommended Action:
Execute Contract #CN26-Q-002/LR with Edgewater Group for Professional Engineering Services in the amount not to exceed $152,410.00 for the City Marina Hurricane Repair Project and authorize the Mayor to execute the contract following review and approval by the City Attorney, City Manager, and Purchasing and Contracting Administrator. Additionally, approve the associated budget amendment.

Summary Explanation & Background:

On December 9, 2025, the City Council approved the Selection Committee's final rankings and recommendation of the top-ranked firm responding to RFQ #26-Q-002/LR for Professional Engineering Services for the City Marina Hurricane Repair Project. The Council also authorized staff to negotiate a contract with the recommended firm, Edgewater Group, with final contract approval and project costs to be brought back to the City Council for consideration.

The final negotiated contract, in the amount of $152,410, is attached. Marina Unreserved Proprietary Fund Balance will be used as the source of funding.

Alternatives:
Yes

Item Budgeted:
No, see attached BA

Source/Use of Funds/Budget Book Page:

405-0000-389.50-12	Unreserved Proprietary Fund Balance	$152,410
405-5555-575.65-00-HURMIL	Capital Construction	$152,410

Strategic Plan:
Goal 2: Efficient & Effective Services

Strategic Plan Impact:
This project will improve the services at the City Marina by making necessary repairs and improvements to the existing dock system.

ATTACHMENTS:
1. BA - MARINA EDGEWATER GROUP CONTRACT
2. Edgewater Contract

Budget Amendment/Transfer Form

Source of Funds:
FY2026

Account Number	Project Number	Description	Amount	Budget Amendment/ Budget Transfer
405-0000-389.50-12	HURMIL	UNRESERVED PROPRIETARY	$ 152,410	Budget Amendment
		Total	**$ 152,410**	

Use of Funds:
FY2026

Account Number	Project Number	Description	Amount	Budget Amendment/ Budget Transfer
405-5555-575.65-00-HURMIL	HURMIL	NON-DEPARTMENTAL/CONSTRUCTION IN PROGRESS	$ 152,410	Budget Amendment
		Total	**$ 152,410**	

Input Name:	Budget Office Approval:	Notes:
		EDGEWATER GROUP LLC CONTRACT FOR PROFESSIONAL ENGINEERING DESIGN SERVICES FOR TITUSVILLE MARINA HURRICANE REPAIR PROJECT
Input Date:	**Budget Office Approval Date:**	
Manual JE/BA#:	**Post Date:**	

PROFESSIONAL ENGINEERING DESIGN SERVICES
FOR TITUSVILLE MARINA HURRICANE REPAIR PROJECT
CONTRACT #CO26Q002/LR

THIS AGREEMENT is entered into by and between the CITY OF Titusville ("the City" or "Owner"), a municipal corporation of the State of Florida, and Edgewater Group LLC ("Consultant"), whose principal address is located at 3020 N. Federal Hwy, Suite 10, Fort Lauderdale, FL 33306.

WITNESSETH THAT:

WHEREAS, the CITY desires to engage a licensed and qualified Consultant firm staffed with knowledgeable and experienced Engineering design, permitting and construction of marinas, docks and basins staff who have special and unique competence and experience with; and

WHEREAS, the Consultant represents that it has such competence and experience in providing these services; and

WHEREAS, the Consultant desires to provide such consulting services in accordance with this agreement; and

WHEREAS, the Consultant is a Consulting Firm authorized to conduct business in the state of Florida, and

WHEREAS, the City, pursuant to § 287.055, Florida Statutes and City Purchasing Policy, conducted a competitive selection process through RFQ#CO26Q002/LR. Professional Engineering Design Services for Titusville Marina Hurricane Repair Project, evaluated proposals based on qualifications, and determined Edgewater Group LLC to be the most qualified firm; and

WHEREAS, the Work includes coordination with FEMA through the City for grant-funded elements, as detailed in Exhibit 2; and

WHEREAS, at the City Council meeting of February 24, 2026, the award of this contract was duly considered and awarded to the Consultant, and staff negotiated with with the Consultant to establish fair and reasonable compensation for the services described herein; and

WHEREAS, the Consultant shall at all times be in privity of contract solely with the City, and shall rely solely upon directions received from the City regarding performance and acceptance of the Work, as further provided herein, and

WHEREAS the City and Consultant desire to enter into an agreement for the performance by the Consultant to provide consulting services as more specifically described in Consultant's proposed Scope of Services for Professional Engineering Design Services for Titusville Marina Hurricane Repair Project (RFQ No. CO26Q002/LR)" signed and dated, identified as Exhibit 2, and incorporated hereto by reference.

NOW, THEREFORE, in consideration of the aforesaid premises, which are hereby made a part of this Agreement, and the payments hereinafter specified and which the City agrees to make, Consultant agrees to furnish and deliver all materials and to do and perform all work and labor required to be furnished and delivered, done and performed for the Work. Consultant agrees to complete the Work in conformity with the contract documents and all attachments and other items incorporated by reference herein and made a part of this Agreement, including, without limitation, General Conditions, Scope of Services, and any other requirements associated with Request for Qualifications RFQ # RFQ CO26Q002/LR Consultant's proposal signed and dated, Addenda, Attachments, Certifications, Affidavits, and Exhibits.

1. ADMINISTRATION.

This Contract is administered by the Public Works Department, a department of the City of Titusville, hereinafter referred to as the Department.

2. TERM.

2.1. This Contract shall be effective from the date of the signature of the last Party to execute the Contract and remain in full force and effect for the duration of the Project, unless it is terminated as otherwise provided herein.

2.2. Survival of Task Orders. City shall not issue new Task Order(s) after the expiration date of this Contract. Existing Task Orders may extend beyond this Contract's expiration. In such situations, the Parties agree that the terms and conditions of this Contract survive as to such Task Order(s), and this Contract and the applicable Task Order(s) shall remain in full force and effect until work on the outstanding Task Order(s) is completed.

3. NON-EXCLUSIVE CONTRACT

The Parties acknowledge that this Contract is not an exclusive agreement and the City may employ other similar contractors to furnish services for the City, as the City, in its sole discretion, finds is in the public interest. The City reserves the right to assign such work to the Consultant as it may approve in the sole discretion of the City.

4. STATEMENT OF WORK AND DELIVERABLES

4.1. Consultant shall deliver all products and deliverables in accordance with Consultant's proposal identified as Exhibit "2" attached hereto and as stated above, in the deliverables, formats and the time(s) stated for completion therein. Deliverables include all items in Exhibit 2, such as preliminary designs, permit applications, and as-built documentation. Consultant shall coordinate with FEMA and incorporate grant requirements. Consultant is responsible for the professional quality, technical accuracy, and timely completion of the Work. Both workmanship and materials shall be of good quality. Consultant shall correct all errors, omissions or deletions in the services to be performed without additional compensation from the City. Unless otherwise specifically provided for herein, Consultant shall provide and pay for all materials, labor, travel, and other facilities and equipment as are necessary for the performance of the Work. The City's Project Manager shall make a final acceptance inspection of the deliverables when they are completed and finished in all respects in accordance herewith. The parties may at any time agree in the form of a written amendment to make changes within the

general scope of this Agreement to the Work to be provided hereunder. Neither party shall unreasonably withhold consent to any such amendment.

At a minimum, the following tasks are:

Task #1	Project Administration – including kickoff meetings, meeting minutes
Task #2	Data Collection - including necessary surveying, geotechnical exploration, and environmental fieldwork.
Task #3	Preliminary Design (60% Complete) – including coordination meeting, preliminary design engineering
Task #4	Environmental Permitting – including preapplication meeting, application development, responses to RFIs and agency coordination
Task #5	Final Construction Drawings and Specifications
Task #6	Construction Services – including bidding assistance, construction oversight, pre-bid meeting attendance, preconstruction attendance, and as-built development.

5. STANDARD OF CARE REQUIRED FOR PROFESSIONAL SERVICES.

5.1. Upon receipt of a Notice to Proceed, Consultant agrees to perform professional services associated with the requested work in accordance with this Contract and the negotiated terms of the applicable Task Order, in a manner consistent with the professional skill and degree of care and diligence ordinarily provided by other similar professionals in the same or similar locality under the same or similar circumstances and as further set forth herein.

5.2. Consultant further agrees that the standard of care required of Consultant to provide the professional services under this Contract includes the following, and the Consultant shall:

5.2.1. Ensure the adequacy of work provided under this Contract with appropriate due diligence and a reasonable standard of care in a manner that adequately captures scope, complexity and design constraints. This includes, but is not limited to, environmental, geotechnical, architectural, landscape

architecture, surveying, and appropriate site visits.

5.2.2. Correct any errors and omissions, and prepare any necessary plan revisions not involving a change in the scope of the work required, that may be required because work was determined by the City to be unsatisfactory, substandard, defective and/or not otherwise not in compliance with the standard of care as set forth in this Contract at no additional cost. Any person or entity may bring concerns about the work to the attention of the City for its review and determination. This remedy shall be cumulative to all other remedies available under law.

5.2.3. Be responsible for the professional quality, technical accuracy, timely completion and coordination of all designs, drawings, specifications, reports, and other services furnished by Consultant under this Contract. Consultant shall, without additional compensation, correct or revise any errors, omissions or other deficiencies in its designs, drawings, specifications, reports, and other services.

5.2.4. Be responsible for recruiting, hiring, training, supervising, disciplining and discharging personnel necessary to maintain an adequate staff of experienced and qualified personnel licensed in the State of Florida to perform all professional services contemplated by this Contract.

5.2.5. Comply with federal, state and local laws, codes and ordinances applicable to the work. Failure or inability on the part of Consultant to have complete knowledge and intent to comply with such law, rules, and regulations shall not relieve Consultant from its obligation to completely perform any task assigned pursuant to this Contract.

5.2.6. Cooperate fully with City in the scheduling and coordination of all phases of the work.

5.2.7. Cooperate and coordinate with other City contractors, as specified in the Task Order.

5.2.8. Exercise an appropriate Quality Control Program to provide adequate oversight and supervision over all of Consultant's sub-contractors.

5.2.9. Report the status of the work to the City as required in the Task

Order or upon request and hold pertinent data, calculations, field notes, records, sketches and other projects open to the inspection of the City or its authorized agent at any time.

5.2.10. Submit all design computations, sketches and other data representative of the work's progress for the City's review as specified in the applicable Task Order. Submit the final work upon incorporation of any modifications requested by the City during any previous review, for the City's review. Any City approval of the Consultant's plans, design, or specifications shall not be deemed to diminish or waive the standard of care or skill required of the Consultant.

5.2.11. Confer with City during the further development and implementation of improvements for which the Consultant has provided design or other services.

5.2.12. Interpret plans and other documents.

5.2.13. Meet project deliverable dates established in each individual Task Order.

5.2.14. Prior to final approval of the work by City, conduct and complete a preliminary check of any construction or other documents through any review committee, third party contractor or any county, city, state or federal agency from which a permit or other approval is required. Any approval obtained from City or any other agency shall not be deemed to diminish or discharge the standard of care or warranty of Consultant as provided for in this Contract.

6. QUALITY CONTROL.

6.1. The Consultant agrees to a high level of quality control and accuracy in keeping with the standard of care of the professional services being provided. The City may request additional data collection or re-analysis of data at no expense to the City. If the original data collected and/or data analysis is later found to be accurate and reasonable, the Consultant shall be compensated for the additional work in accordance with the Consultant's hourly rate for staff performing the work and providing verifiable documentation.

6.2. The Consultant acknowledges that the City will periodically evaluate the Consultant's performance and that the evaluation will be used by the City in determining the Consultant's qualifications for future contracts with the City.

7. USE OF TASK ORDERS.

7.1. Generally. All professional services or work provided by Consultant for City shall be identified in written Task Orders and performed to the current professional standards of the applicable discipline and as further set forth in the standard of care section. Task Orders shall entail a description of services to be performed, a statement of fees, a proposed schedule for compensation and a projected schedule for completion of the work to be performed by Consultant.

7.2. Effectiveness. A Task Order shall not give rise to any contractual rights until a written Notice to Proceed for the respective Task Order is signed by the City Mayor or other authorized representative of the City, where approved by Council action. All written Notices to Proceed and specific Task Orders are incorporated to this Contract by this reference and shall constitute a contract addendum to this Contract.

7.3. Order of Work. City shall have the sole right to determine which units or sections of the work on which Consultant shall proceed and in what order. Should a Task Order revise the scope, cost or schedule, the Consultant shall submit such revisions in scope, cost or schedule in writing to City for review and approval as a modification by City prior to commencing the revision. Consultant waives any right to make a claim based upon a revision if such notice was not provided.

7.4. City Assistance. Where appropriate, City shall make city personnel with knowledge of the operation of City as it relates to the Task Order available to assist Consultant. City shall make its facilities accessible to Consultant, where feasible, and as required for Consultant's performance of services under this Contract. In those instances where Consultant OR may deem it necessary to obtain access or entry upon privately owned property in its performance of Contract, Consultant may request assistance from City in facilitating such access. City shall assist as is feasible.

7.5 Task Order Modification

7.5.1. All modifications to a Task Order must be in writing and approved by both Parties. Consultant shall not perform any additional work or services without first receiving signed written authorization from City specifying said services to be performed and a written "Notice to Proceed" from the City.

7.5.2. The Parties agree that City is not obligated to issue any Task Order for any specific project or part thereof. The Parties agree City may modify the scope of a project in a Task Order as the City deems appropriate, including a commensurate increase or decrease in the fee.

7.5.3. In the event Consultant experiences any delay resulting from circumstances beyond its control, or a change in the scope of work which will result in an increase or decrease in a Task Order's price or time, Consultant shall provide immediate notice in writing to the City for consideration of additional compensation or time. Additional compensation shall be limited to direct costs resulting from the delay or change in work.

8. TIME OF COMPLETION FOR TASK ORDERS.

8.1. Consultant shall commence work upon receipt of a written Notice to Proceed or Purchase Order issued by City subsequent to the execution of this Contract. Consultant shall complete the work within the time stated in the Task Order. The Consultant acknowledges that time is of the essence for all work performed under this Contract.

8.2. Upon request, City shall grant a reasonable extension of time in the event there is a delay on the part of the City in fulfilling its obligations under the Contract which causes a delay to Consultant in its performance of the services or work.

8.3. Force Majeure.

8.3.1. The Consultant shall not be liable for its failure to perform hereunder if its performance is rendered impossible or delayed by any unforeseen act, event or condition beyond its reasonable control which by the exercise of due diligence it shall be unable to overcome. Such unforeseen acts, events or conditions shall include but are not limited to the following: Acts of God, hurricanes, tornado, lightning, or

earthquake; strikes or lockouts; acts of war, civil insurrection, riots or terrorism; fire or flood not caused by the Party unable to perform; change in law not due to improper conduct; pandemics or quarantines. Notwithstanding anything in this Contract to the contrary, the term "Force Majeure" does not include and the Consultant shall not be excused from performance under this Contract for events relating to increased costs, including, without limitation, increased costs of fuel, labor, insurance or other expenses of performing the services hereunder.

8.3.2. The failure to perform must occur directly, exclusively and contemporaneously with the Force Majeure event. Should the Consultant be obstructed or delayed in the prosecution or completion of its services or work as a result of said unforeseeable causes beyond the control of the Consultant and not due to its own fault and neglect, Consultant shall, within seven (7) calendar days of the delay becoming apparent, notify the City of such delay in writing stating the cause or causes thereof, failing which the Consultant shall waive any right the Consultant may have to request a reasonable extension of time to complete the work required by the Task Order.

Such reasonable extensions of time to complete the Task Order shall be the sole remedy of the Consultant for such delays, and the Consultant will not be entitled to any damages or any claim for extra compensation.

8.3.3. Ownership and copyright to all reports and all accompanying data (in all formats) produced pursuant to Work shall be vested in the City. Any source documents or any other documents or materials developed, secured or used in the performance of this Agreement shall be delivered to the City in accessible formats, and the City granted perpetual, irrevocable access (e.g., a non-exclusive license) to use, reproduce, and modify such documents or materials for City purposes, regardless of the originating entity's ownership.

8.3.4. If any existing computer codes required for the development of a model selected by Consultant and necessary for use in completing the Work are deemed proprietary by Consultant, then Consultant grants to the City and its assignees, a non-exclusive license to use the proprietary computer model codes for the sole purpose of utilization and/or further development of the Work, and agrees to indemnify and hold the City harmless from all costs, damages, and expenses, including attorney's fees, arising from any claim, right, or suit over the proprietary

interests in the computer codes developed for the Work, including the costs, damages, and expenses, including attorneys' fees, incurred by the City in the event of claims brought pursuant to Chapter 119, Fla. Statutes. Documentation of Consultant's proprietary rights shall be provided to the City upon request. When submitted to the City, the Consultant's computer codes may become public records subject to the provisions of Chapter 119, Fla. Statutes.

8.3.5. Other Computer Codes. Consultant shall not be entitled to claim any proprietary right to computer codes that are developed by Consultant in fulfilling the requirements of the Work, which shall be considered "work for hire" under applicable copyright and/or patent law. Such computer codes, which constitute a Deliverable hereunder, are the sole and exclusive property of the City. The City may copyright or patent such computer codes in their own name to the full extent authorized by law.

9. COMPENSATION AND REIMBURSABLE COSTS

9.1 As consideration for providing professional services, the City agrees to pay the Consultant for each deliverable rendered and accepted by the City pursuant to this Agreement and as detailed in Consultant's proposal identified as Exhibit "2" attached hereto.

9.2. Fee for Services. City may specify one or both fee options below in an approved Task Order, as is applicable to the situation.

9.2.1. Hourly Rate. The Consultant shall be compensated at the Hourly Rate Schedule for each hour engaged directly in the work.

9.2.2. Lump Sum Fee. At the option of City, instead of an Hourly rate, the Parties may mutually agree upon a lump sum fee for any requested portion of work in a written Task Order.

9.3 Reimbursable Expenses or Costs. Consultant shall be compensated for certain work-related expenditures not covered by the fee for service only if (1) the reimbursable expenses are pre-approved by specification in the Task Order; or (2)

Consultant has obtained written pre-approval from City prior to incurring the expense. If an expense is not pre-approved by City, the Consultant will not be entitled to be compensated by City for such expense. When requesting City pre-approval for an expense, Consultant must provide a written justification for the expenses accompanied by copies of invoices, receipts, requisitions, and/or estimates (if actual expense cannot be provided until actual cost is incurred) to document the need for the expense. City, upon receipt of satisfactory documentation, will provide Consultant with its written decision on approval or rejection of said expenses. Consultant must submit the final receipts, invoices, etc., for expenses incurred in order to be reimbursed by City. City will reimburse Consultant for pre-approved expenses at actual cost(s) (no markup or percentage increase will be paid by the City). Types of reimbursable expenses may include:

9.3.1. Documents and Incidentals. Expenses for document reproduction or other incidental expenses. These expenses shall be reimbursed on a direct cost basis to cover labor and expenses.

9.3.2. Contractual Costs. Subcontractors shall be reimbursed at the expense of such cost. Requests for copies of invoices, receipts must accompany reimbursement of Contractual Costs, purchase requisitions, etc. to document the charges.

9.3.3. Equipment Costs. Equipment shall be reimbursed at the cost of rental or purchase cost. Equipment purchased is the property of the City and must be returned upon the completion of the related Task or Purchase Order.

9.3.4. Travel Costs. The Parties agree that travel costs for normal business travel necessary under the performance of this contract is included in the Consultant's hourly fee. City, in its sole discretion, may approve a Consultant's request for reimbursement for special travel required under extenuating circumstances as part of a Task Order. If approved, such travel shall be reimbursed at the same rate as for City employees in accordance with the most current version of City Administrative Policy AP

1-1 Travel Reimbursement, (issued by the City Manager, copy available upon request) which administrative policy is incorporated into this contract by this reference, and section 112.061, Florida Statutes.

9.3.5. Permits, Licenses and Fees. Generally, unless specifically authorized, permits, fees and licenses necessary for performance of work pursuant to this Contract will not be waived by City, and Consultant shall be responsible for obtaining, and shall pay for their own professional permits, fees, and licenses, as required. If authorized, and not treated as a reimbursable cost, the City shall pay directly to the governing authority, the cost of permits, fees, and/or licenses required for completion of the scope of services for a particular Task Order.

9.3.6. Other miscellaneous expenses previously authorized in writing by the City.

9.4 Invoicing Procedure. All invoices shall be submitted to the City of Titusville, Public Works Administration, 2000 S Washington Ave, Titusville, FL 32780. Consultant shall submit invoices based upon the actual Work performed upon Task completion and shall bill as per the Price Schedule included in the Consultant's proposal, Exhibit 2. All payment requests shall contain the contract number, Consultant's name and address, name of City Project Manager, and name of the Consultant's Project Manager. Invoices shall include breakdown by task, hours, rates, and reimbursables.

9.4.1. All invoices shall be approved by the City as a condition precedent to payment. Payment requests that do not correspond to the appropriate Work Deliverable or other requirements of this paragraph will be returned to the Consultant without action within twenty (20) business days of receipt and shall state the basis for rejection of the invoice. The parties mutually agree, pursuant to § 218.735, Florida Statutes, that the City shall make payments within forty-five (45) days of receipt of a conforming invoice, as specified in this Article, to accommodate administrative review and approval processes for grant-funded deliverables.

9.4.2. The City may withhold or, on account of subsequently discovered evidence, nullify, in whole or in part, any payment to such an extent as may be necessary to protect the City from loss as a result of: (1) defective Work not remedied;

(2) failure of Consultant to make payments when due to subcontractors or suppliers for materials or labor; (3) the City's determination that the Work cannot be completed for the remaining or unpaid funds; (4) failure to maintain adequate progress in the Work; or (5) any other material breach of this Agreement. Amounts withheld shall not be considered due and shall not be paid until the ground(s) for withholding payment have been remedied.

9.4.3. Consultant shall submit the final invoice to the City no later than 90 days after the Completion Date. Consultant's failure to submit the final invoice to the city within the time frame established herein shall be a forfeiture of any remaining amount due under the agreement.

9.4.4. Upon the satisfactory completion of the Work, the City will provide a written statement to Consultant accepting all deliverables. Acceptance of the final payment shall be considered as a release in full of all claims against the City, or any of its members, agents, and employees, arising from or by reason of the Work done and materials furnished hereunder, with the exception of any pending claims for additional compensation that have been documented and filed as required by this Agreement.

10. OWNERSHIP AND REUSE OF WORK PRODUCT.

10.1. City agrees to furnish to Consultant, upon request, for inspection and copying, any known documents or data available in the City's files pertaining to the work to be performed under this Contract which may be reasonably required by Consultant to be performed under this Contract. To the extent City provides such documents or data to Consultant for Consultant's use in a project, City agrees to obtain, or cause to be obtained, any releases, permits or authorization necessary for the use of the documents or data. The City agrees to hold Consultant harmless for any claims arising with respect to City's releases, permits or authorization for the use of the documents.

10.2. To the extent Consultant provides Work Product that Consultant did not create, to City for its use, Consultant agrees to obtain, or cause to be obtained, any releases, permits or authorization necessary for the use of the Work Product by City to the same extent that Consultant is required to provide City in sections 10.3 and 10.4. Consultant agrees to be responsible for any claims arising with respect to such use of Work Product provided by Consultant. Consultant agrees that in any proposal for a Task

Order to use Work Product it did not create, the Consultant has factored all costs of the use of such Work Product into its proposal and that no additional compensation is owed by City.

10.3. To the extent Consultant creates Work Product under this Contract for City, then to the extent permissible under the law, the Parties agree the Work Product is specially ordered or commissioned as a "work for hire" under 17 United States Code section 101. Consultant agrees that City is the exclusive owner of all Work Product created under this paragraph, without restrictions or limitations upon its use. When each individual section of work requested pursuant to this sub-section is complete, all of the work products shall be delivered to the City for its use. There shall be no additional compensation for the rights and property granted under this paragraph.

10.4. Work product created as a result of this Contract is a public record, unless otherwise exempt or confidential under State or federal law. The City shall be entitled to utilize any and all work product created as a result of this Contract, including those that fall outside the definition of a "work made for hire" under 17 United States Code Section 101, subject to any applicable licensing restrictions or other legal limitations.

10.5. To the extent Consultant creates Work Product for City that depends upon original notes, working documents, design calculations, computations and plans, City shall be entitled to a copy of such materials upon request, and further provided said materials shall not be destroyed without the prior written approval of City.

10.6. Reuse of Work Products.

10.6.1. Consultant may not reuse plans, specifications, or reports specifically developed by Consultant for City without express written permission from City.

10.6.2. In accordance with section 287.055(10), Florida Statutes, and section 10.2 of this Contract, the City may reuse any plans, specifications, or reports provided under this Contract, subject to any conditions in the Task Order.

11. FEMA CONTRACT PROVISIONS.

11.1. Work under this Contract may involve funding to be compensated or reimbursed (to the City) by funds authorized through FEMA. The Consultant is required to comply with the additional contract clauses required for FEMA funding/reimbursement attached as Attachment A.

11.2. The special clauses of FEMA set forth in Attachment A control over any conflicting clauses otherwise set forth in the Contract.

12. INDEMNITY AND INSURANCE

12.1. Consultant agrees to indemnify and hold harmless the City and its officers and employees, from liabilities, damages, losses, and costs, including, but not limited to, reasonable attorneys' fees, to the extent caused by the negligence, recklessness, or intentionally wrongful conduct of the Consultant and other persons employed or utilized by Consultant in the performance of this contract. The City and Consultant further agree that this provision satisfies the requirement of Florida Statute Section 725.08 so that the indemnification provisions are valid and binding upon the parties to this contract.

12.2 Consultant shall procure and maintain, at their own expense and without cost to City, the following types of insurance described below. Consultant shall be liable and responsible for negligent errors and omissions in the performance of the Contract responsibilities and shall carry professional liability insurance and indemnify the City against negligent errors and omissions as specified herein below.

- General Liability Insurance policy with a $1,000,000 combined single limit for each occurrence and general aggregate to include the following coverage: Operations, Products and Completed Operations, Personal Injury, Contractual Liability covering this Contract, "X-C-U" hazards.

- Workers' Compensation Insurance. Florida statutory requirements.

- General Liability. Consultant shall procure and maintain during the life of this Agreement, Commercial General Liability Insurance on an "Occurrence Basis," with limits of liability not less than $500,000 per occurrence and/or aggregate combined single limit, Personal Injury, Bodily Injury, and Property Damage. Coverage shall include the following extensions: (1) Contractual Liability, (2) Products and

Completed Operations, (3) Independent Contractors Coverage, (4) Broad Form General Liability Extensions or equivalent, and (5) Deletion of all Explosion, Collapse, and Underground (XCU) Exclusions, if applicable, per contract aggregate.

- Automobile Liability. $500,000 combined single limits per accident for bodily injury and property damage.

- Umbrella policy. With limits of $500,000.

- Professional Liability. (per claim) $1,000,000 single limits.

- Deductibles and Self-Insured Retentions. Any deductibles or self-insured retentions must be declared to and approved by the City.

- Acceptability of Insurers. Insurance is to be placed with insurers with an A.M. Best rating of A:V or greater.

The City shall be shown as an additional insured party under all of the above insurance policies, with the exception of the workers' compensation policy.

The proof of insurance supplied prior to execution of this Agreement shall have the words "endeavor to" and "but failure to mail such notice shall impose no obligation or liability of any kind upon the company, its agents, or representatives" stricken from their cancellation clause in the Certificate of Insurance.

All insurance shall be maintained in force until completion of the Work and shall include an endorsement requiring ten (10) days prior written notice to the City before any change or cancellation is made effective.

The City requires that general liability insurance be written on an "occurrence" basis. "Claims made" coverage will be accepted only on an "exception" basis after verifying that "occurrence" coverage is not available.

12 3. Consultant shall provide Certificates of Insurance to the City demonstrating that the aforementioned insurance requirements have been met prior to the commencement of work under this Contract. Insurance carriers providing coverage required herein must be licensed or authorized to conduct business in the State of Florida and must possess A.M. Best's Financial Strength Rating of A- Class VIII or better. The Certificates of Insurance shall indicate that the policies (except professional liability, workers compensation, and employers liability) have been endorsed to include the City as an additional insured (a waiver of subrogation in lieu of additional insured status on the Workers' Compensation policy is acceptable) and that these policies may not be canceled or modified without thirty (30) days prior written notice to the City.

12.4. The insurance coverages enumerated above constitute the requirements and shall in no way lessen or limit the liability of Consultant under the terms of the Contract. Subcontractor's insurance shall be the responsibility of Consultant.

12.5 The Consultant shall maintain the insurance coverage in compliance with Paragraphs 12.1 through 12.3, above, throughout the term of this Contract.

13. FUNDING CONTINGENCY

This Contract is at all times contingent upon funding, which may include a single source or multiple sources, including, but not limited to: (1) ad valorem tax revenues appropriated by the City; (2) annual appropriations by the Florida Legislature, or (3) appropriations from other agencies or funding sources. Contracts that extend for a period of more than one (1) year are subject to annual appropriation of funds, in the sole discretion and judgment of the City, for each succeeding year. Should the Work provided for hereunder not be approved, in whole or in part, for funding by an external funding source, or the City in succeeding years, the City shall so notify Consultant, and this Contract shall be deemed terminated for convenience in accordance with Section 18 **TERMINATION FOR CONVENIENCE** thirty (30) days after receipt of such notice, or within such additional time as the City may allow.

14. NOTICES AND AUTHORIZED REPRESENTATIVES.

14.1. Authorized Representatives. The Parties agree that in order to facilitate the orderly and efficient implementation of any Task Order, each Party shall appoint an

authorized representative(s) for such Party. The City's representative shall have the authority to transmit instructions, receive information, and interpret and define the City's policies and decisions pertinent to the work covered by this Contract as long as such transmissions do not result in an increase in the cost of or time to perform work. The Parties understand and agree that only City Council, City Manager, Assistant City Manager, or Department Director have the authority to issue Task Orders, or approve changes or modifications to this Contract or a Task Order. The Consultant's representative shall be authorized to act on behalf of Consultant regarding all matters involving the conduct of its performance under this Contract.

14.2. The Parties' designated representatives and their respective addresses for purposes of this Contract are as follows:

CITY

Sandy Reller, Public Works Director
2000 S Washington Avenue
Titusville, FL 32780
Sandra.Reller@titusville.com

CONSUALTANT

Erik Schults, PE
3020 North Federal Hwy, Ste 10
Ft. Lauderdale, FL 33306
Erik@edgewater.pro

14.3 Either Party will have the right to change its authorized representative(s), or to add representatives, from time to time, throughout the Contract, by giving written notice to the other Party in accordance with the Notice Provisions below.

14.4 Notices. All notices required or permitted under this Contract and any written consents or approvals required shall be in writing and are in effect upon receipt. All notices for legal claims, or termination must be transmitted either by personal hand delivery; United States Postal Service (USPS), certified mail return receipt requested; or, overnight express mail delivery. Other notices, such as signed notices to proceed, may be transmitted by E-mail to the authorized representative and shall be effective on the date directed in the notice. The addresses set forth in 14.2 for the respective Parties shall be the places where notices shall be sent, unless prior written notice of change of address is given.

15. CCNA PROVISIONS

15.1 Contingency Fees. Pursuant to section 287.055(6)(a), Fla. Stat., Consultant warrants that it has not employed or retained any company or person, other than a bona fide employee working solely for Consultant, to solicit or secure this Agreement, and that it has not paid or agreed to pay any person, company, corporation, individual, or firm, other than a bona fide employee working solely for Consultant, any fee, commission, percentage, gift, or other consideration, contingent upon or resulting from the award or making of this Agreement. For breach or violation of these provisions, the City may terminate this Agreement without liability and, at its discretion, deduct from the contract price or otherwise recover the full amount of any such fee, commission, percentage, gift, or other consideration.

15.2 Truth-in-Negotiations. In accordance with the provisions of Chapter 287.055, Florida Statutes, for contracts exceeding Category Four of section 287.017, Florida Statutes, the Consultant agrees to execute a truth-in-negotiations certificate and agrees the original Contract price and any additions may be adjusted to exclude any significant sums by which City determines the Contract price was increased due to inaccurate, incomplete or non-current wage rates and other factual unit costs. All such Contract adjustments shall be made within one (1) year following the termination or expiration of this Contract. The truth-in-negotiations certificate at Attachment F, when completed, is attached and incorporated to this Contract by this reference.

16. ATTORNEY'S FEES, GOVERNING LAW, VENUE, AND WAIVER OF JURY TRIAL

In the event of any legal action between the Parties arising out of this Contract, each Party shall bear its own attorney's fees and costs. This Contract, regardless of where executed, shall be governed by and construed according to the laws of the State of Florida. Venue for any legal action brought by any Party to this Contract to interpret, construe or enforce this Contract shall be in a court of competent jurisdiction in and for Brevard County, Florida, and the Parties agree to waive a jury trial and any trial shall be non-jury. Consultant consents and waives any objection or defenses relating to Florida state court having jurisdiction over any dispute or claim arising out of this agreement and consents to process being served upon its Florida registered agent.

17. DISPUTE RESOLUTION.

17.1. If City objects to all or any portion of an invoice, City shall so notify Consultant, and indicate in writing what corrective action is required of Consultant. If a dispute over an invoice occurs, the Parties will work to resolve the dispute in accordance with section 218.76, Florida Statutes.

17.2. To the extent the City requests Consultant to perform services that the Consultant believes are not described in the Task Order, or with respect to which there is a disagreement between the Parties as to whether or not the services are already required by a particular Task Order, then Consultant shall provide written notice to City of the issue(s), and that Consultant will follow City's written directive provided it is without prejudice to Consultant's right to seek additional compensation from City. Consultant shall only provide such service upon receipt of a written City directive/Notice to Proceed to explicitly perform such service. The City's delivery of such written directive/Notice to Proceed following Consultant's notification shall be without prejudice to City's right to maintain that such services do not constitute the basis for additional compensation under the applicable Task Order.

17.3 Waiver. The waiver by either Party of the other Party's obligations or duties under this Contract shall not constitute a waiver of any other obligation or duty of the other Party under this Contract, nor shall a waiver of any such obligation or duty constitute a continuing waiver of that obligation or duty.

18. TERMINATION OF CONTRACT.

18.1. Termination for Convenience.

18.1.1. The City may terminate this Agreement or any Work issued under it, in whole or in part, at any time, with or without cause, upon thirty (30) days written notice to Consultant. Upon receiving notice of termination, Consultant shall discontinue the Work on the date and to the extent specified in the notice and shall place no further orders for materials, equipment, services, or facilities, except as needed to continue any portion of the Work that was not terminated. Consultant shall also make every reasonable effort to cancel, upon terms satisfactory to the City, all orders or subcontracts related to the terminated Work.

In the event of such termination, Consultant shall be compensated for any Work performed under this Agreement prior to the date of termination and for materials that were ordered prior to receipt of notice of termination that cannot be returned to the vendor. Any such materials shall become the property of the City. Consultant waives all claims for compensation in excess of that which is specifically provided for herein, including, but not limited to, loss of anticipated profits; idle equipment, labor, and facilities; and claims of subcontractors and vendors.

18.1.2. Termination for Convenience by the Consultant. The Consultant may terminate this Contract for convenience by giving the City sixty (60) calendar days written notice of such termination. The Consultant must provide the City with all records and documentation of all work performed, as of the date of the notice, within 30 calendar days of the notice. The Consultant will complete the work required by any Task Order for which the work is incomplete as of the date of the notice if so directed by the City in writing and provide such records and documentation of such work upon completion.

18.2 Termination for Failure to Perform.

18.2.1. If the Consultant is failing to perform, the City will issue a notice of failure to perform to the Consultant listing the Task Order(s) for which the City has determined there is a failure to perform and describe the deficiencies in the Consultant's work. The Notice shall provide the Consultant with thirty (30) calendar days from the date the Notice is received in which to correct such deficiencies described in said notice. If the Consultant fails to correct such deficiencies to the satisfaction of the City within the stated time period, then the City may terminate the Contract immediately by providing written notice to the Consultant for failure to perform.

18.2.2. Upon termination by the City, City may take over the work and cause it to be performed to completion by Contract or otherwise. In such case, the City reserves all rights and remedies available, including, but not limited to, the right to recover City's additional cost incurred in securing complete performance. The rights and remedies of City provided in this clause are in addition to any other rights and remedies provided by law or under this Contract. If, after City's termination of the Contract for failure of the Consultant to fulfill contractual obligations, it is determined

that Consultant had not failed the contractual obligations, the termination shall be deemed to be a termination for the convenience of City.

18.3. Upon termination for any reason, the Parties agree that any work completed or services provided by Consultant prior to the date of termination shall become property of City. Upon City request, Consultant shall deliver to City Work Product as may have been accumulated by Consultant in performing this Contract, whether completed or in process.

18.4. Payment on Termination. In the event of termination by City, the City's sole obligation to Consultant shall be payment for those portions of satisfactorily completely performed work previously authorized by approved Task Order. The City shall not be obligated to pay for any services performed after Consultant has received the final notice of termination unless the City otherwise directs the Consultant in writing to complete specified elements of the work. Such payment shall be determined on the basis of the hours of work performed by Consultant, or the percentage or work complete as estimated by Consultant and agreed upon by City up to the time of termination. In the event of such termination, City may, without penalty or other obligation to Consultant, elect to employ other persons to perform the same or similar services. In the event of deficient professional services, City shall not pay the Consultant for deficient services; however, if any, of the work performed by the Consultant is used by or useful to any other contractor retained by City to finish the work, the County will pay the Consultant for such useful work to the extent that City does not incur additional costs, or pay twice for the same work, over the work/costs set forth in the canceled Task Order issued to the Consultant and what the County pays the new contractor.

19. ASSIGNMENT AND SUBCONTRACTS.

Consultant shall not sublet, assign, or transfer any Work, in whole or in part, or assign any moneys due or to become due hereunder, without the prior written consent of the City. Consultant shall notify the City's Project Manager in writing of the names of subcontractors proposed for the services, if different than the team specified in the applicable selection prior to execution of the Agreement. Neither City approval of a subcontractor nor any other provision of this Agreement shall create a contractual relationship between any subcontractor and the City. Consultant shall be responsible for the fulfillment of all work elements included in the subcontracts and shall be responsible

for the payment of all monies due under any subcontract. Consultant shall be as fully responsible to the City for the acts and omissions of its subcontractors, and of persons either directly or indirectly employed by them, as it is for its own acts and omissions. Consultant shall hold the City harmless from any liability or damages arising under or from any subcontract to the extent allowed by law. The subcontractor(s) shall provide evidence of said hold harmless and indemnity prior to commencement of work.

20. INTEREST OF CONSULTANT

Consultant certifies that no officer, agent, or employee of the City has any material interest, as defined in Chapter 112, Fla. Stat., either directly or indirectly, in the business of Consultant to be conducted hereby, and that no such person shall have any such interest at any time during the term of this Agreement.

21. INDEPENDENT CONTRACTOR

Consultant is an independent contractor. Neither Consultant nor Consultant's employees are employees of the City. Consultant shall have the right to control and direct the means and methods by which the Work is accomplished. Consultant may perform services for others, which solely utilize Consultant's facilities and do not violate any confidentiality requirements of this Agreement. Consultant is solely responsible for compliance with all labor and tax laws pertaining to Consultant, its officers, agents, and employees, and shall indemnify and hold the City harmless from any failure to comply with such laws. Consultant's duties with respect to Consultant, its officers, agents, and employees, shall include, but not be limited to: (1) providing Workers' Compensation coverage for employees as required by law; (2) hiring of any employees, assistants, or subcontractors necessary for performance of the Work; (3) providing any and all employment benefits, including, but not limited to, annual leave, sick leave, paid holidays, health insurance, retirement benefits, and disability insurance; (4) payment of all federal, state and local taxes income or employment taxes, and, if Consultant is not a corporation, self-employment (Social Security) taxes; (5) compliance with the Fair Labor Standards Act, 29 U.S.C. §§ 201, et seq., including payment of overtime in accordance with the requirements of said Act; (6) providing employee training for all functions necessary for performance of the Work; (7) providing equipment and materials necessary to the performance of the Work; and (8) providing office or other facilities for the performance of the Work. In the event the City provides training, equipment, materials, or facilities or otherwise

facilitate performance of the Work, this shall not affect any of Consultant's duties hereunder or alter Consultant's status as an independent contractor.

22. CIVIL RIGHTS

Pursuant to Chapter 760, Fla. Stat., Consultant shall not discriminate against any employee or applicant for employment because of race, color, religion, sex, national origin, age, handicap, or marital status.

23. AUDIT: ACCESS TO RECORDS

Consultant agrees that the City or its duly authorized representatives shall, until the expiration of three (3) years after expenditure of funds hereunder, have access to examine any of Consultant's books, documents, papers, and other records involving transactions related to this Agreement. Consultant shall preserve all such records for a period of not less than three (3) years. Payment(s) made hereunder shall be reduced for amounts charged that are found on the basis of audit examination not to constitute allowable costs. Consultant shall refund any such reduction of payments. All required records shall be maintained until an audit has been completed and all questions arising from it are resolved. Consultant will provide proper facilities for access to and inspection of all required records.

24. RELEASE OF INFORMATION. Pursuant to § 119.0701, Florida Statutes, the Consultant acknowledges that records made or received in the course of performance of the Work may be public records that are subject to the requirements of Chapter 119, Fla. Stat. However, some records may be confidential or exempt from disclosure under Chapter 119, Fla. Stat. If the Consultant receives a public records request, it shall contact the City's custodian of public records at 321-567-3682, WANDA.WELLS@TITUSVILLE.COM, 555 S. Washington Ave., Titusville, FL 32796, to coordinate a response. The Consultant shall not release any records that may be exempt or confidential under Chapter 119, Florida Statutes, without prior consultation with the City. In addition, Consultant shall not prepare any news or press release in any way related to this Agreement, without the City's written consent.

25. ROYALTIES AND PATENTS.

Unless expressly provided otherwise herein, Consultant shall pay all royalties and patent and license fees necessary for performance of the Work and shall defend all suits or claims for infringement of any patent rights and save and hold the City harmless from loss on account thereof, provided, however, that the City shall be

responsible for all such loss when the utilization of a particular process or the product of a particular manufacturer is specified by the City. If Consultant at any time has information that the process or article so specified is an infringement of a patent, it shall be responsible for such loss unless it promptly provides such information to the City. Consultant hereby certifies to the City that the Work to be performed pursuant to this Agreement does not and will not infringe on any patent rights.

26. PUBLIC ENTITY CRIME

Upon execution of this Agreement, Contractor shall submit to the City a sworn statement on the attached form Attachment D, and incorporated herein, in accordance with provisions of Section 287.133 (1), Florida Statutes, stating whether a person or affiliate as defined has been convicted of a public entity crime subsequent to July 1, 1989.

27. EQUAL OPPORTUNITY EMPLOYER.

The City is an Equal Opportunity Employer and encourages Contractor to comply with EOE State and Federal regulations. Contractor shall include this clause in any subcontracts.

28. DRUG-FREE WORKPLACE

Upon execution of this Contract, Contractor shall submit to the City a sworn statement on the attached form, Attachment E, and incorporated herein, in accordance with the provisions of Florida Statute 287.087.

29. HUMAN TRAFFICKING AFFIDAVIT.

Upon execution of this Contract, Contractor shall submit a sworn statement to the City on the attached form, Attachment C, and incorporated herein, in accordance with the provisions of Florida Statute 787.06(13), which affirms understanding that the Contractor does not engage in human trafficking activities of any kind.

30. SCRUTINIZED COMPANIES

In accordance with Sections 287.135, Florida Statues prohibit state agencies departments, and local government entities from contracting with Scrutinized Companies. Contractor and Subcontractor(s) shall complete the Affidavit form provided, Attachment B and incorporated herein at the time of contract execution and annually thereafter upon renewal. Contractor and Subcontractor(s) shall affirm not to be on the Scrutinized Companies with Activities in Sudan List, or the Scrutinized Companies with

Activities in the Iran Petroleum Energy Sector List created pursuant to s. 215.473, Florida Statutes, nor have business operations in Cuba or Syria and are not on the Scrutinized Companies that Boycott Israel List, created pursuant to Section 215.4725, Florida Statutes or participating in a boycott of Israel. The Contractor or Subcontractor(s) further acknowledges and agrees that the City may immediately terminate this Agreement and any subsequent renewal term for cause if the Contractor or Subcontractor(s) is found to have submitted a false certification or if the Contractor or Subcontractor(s) is placed on the Scrutinized Companies with Activities in Sudan List, the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, or the Scrutinized Companies that Boycott Israel List, or is engaged in a boycott of Israel during the Term of the Agreement. Further, the Contractor or Subcontractor(s) acknowledges and agrees that a false certification or representation hereunder is a material breach of this Agreement, and the Agreement shall be terminated by the City if the Contractor or Subcontractor(s) and any actively contracted company for the Contractor or Subcontractor is found to have been placed on the Scrutinized Companies that Boycott Israel List or is engaged in a boycott of Israel.

31. E-VERIFY

Pursuant to Florida Statutes § 448.095, the Contractor shall use the U.S. Department of Homeland Security's E-Verify system to verify the employment eligibility of all new employees hired by the Contractor during the term of this Agreement. The Contractor shall provide certification of compliance annually to the City, consistent with § 448.095(5). In the event the E-Verify system is unavailable for three consecutive business days, the Contractor shall use Form I-9 to verify employment eligibility. Any subcontractor(s) must also comply.

32. ANTI-KICKBACK COMPLIANCE

Consultant shall not offer, give, or receive any unlawful compensation, reward, or inducement to any person or entity, including City officers, agents, or employees, to influence the award or performance of this Agreement, in accordance with § 838.016, Florida Statutes. Any violation of this provision may result in termination for cause, in accordance with Section 18, and other remedies available under law.

33. CONFLICTING PROVISIONS

If any provision hereof is found to be in conflict with any other, then the specific terms shall prevail over the general.

34. CONSTRUCTION OF AGREEMENT

This Agreement shall not be construed more strictly against one party than against the other merely by virtue of the fact that it may have been prepared by counsel for one of the parties, it being recognized that both parties have contributed substantially and materially to the preparation hereof.

35. ENTIRE AGREEMENT.

This Agreement, upon execution by Consultant and the City, constitutes the entire agreement of the parties. The parties are not bound by any stipulations, representations, agreements, or promises, oral or otherwise, not printed or inserted herein. Consultant agrees that no representations have been made by the City to induce Consultant to enter into this Agreement other than as expressly stated herein. This Agreement cannot be changed orally or by any means other than written amendments referencing this Agreement and signed by all parties.

36. SEPARATE COUNTERPARTS.

This Agreement may be executed in separate counterparts, which shall not affect its validity.

37. AUTHORITY TO ENTER INTO AGREEMENT.

Each party to this Agreement has the authority to enter into and form this Agreement. The individuals signing the Agreement have the authority to act as agents of their respective organizations. Each party acknowledges that they have read this Agreement and will abide by it.

38. AUDIT RIGHTS

The City reserves the right to conduct audits of the Contractor's records related to the administration of benefits and premiums for their enrolled employees at any time during the term of this Agreement and for three years thereafter. The Contractor shall maintain accurate records and provide access to the City or its designated auditors upon reasonable notice.

39. PUBLIC RECORDS.

Records of the Consultant that are made or received in the course of performance of the Consultant's obligations under this Contract may be public records that are subject to the requirements of Chapter 119, Fla. Stat. and accordingly Consultant shall keep and maintain public records that ordinarily and necessarily would be

required by the City in order to perform the service. However, some records may be confidential or exempt from disclosure under Chapter 119, Fla. Stat. In the event the Consultant receives a request for any such records, the Consultant shall notify the City and comply with Chapter 119, Fla. Stat. The Consultant shall not prepare any news or press release in any way related to this Contract, without the City's written consent. Consultant hereby agrees to comply with the following: As provided in Section 119.0701, Florida Statutes, the Consultant is required to, and by executing this Contract, the Consultant agrees to:

a) Keep and maintain public records that ordinarily and necessarily would be required by the City in order to perform the service.
b) Upon request from the City's custodian of public records, provide the City with a copy of the requested records or allow the records to be inspected or copied within a reasonable time at a cost that does not exceed the cost provided in Chapter 119.07, Florida Statutes or as otherwise provided by law.
c) Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law for the duration of the contract term and following the completion of the contract if the Consultant does not transfer the records to the City.
d) Upon completion of the contract, transfer, at no cost to the City, all public records in possession of the Consultant or keep and maintain public records required by the City to perform the service. If the Consultant transfers all public records upon completion of the contract, Consultant shall destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. If Consultant keeps and maintains public records upon completion of the contract, Consultant shall meet all applicable requirements for retaining public records. All records stored electronically must be provided to the City upon request from the City's custodian of public records in a format that is compatible with the information technology systems of the City.

2. The term "public record" as used in this provision includes all documents, papers, letters, maps, books, tapes, photographs, films, sound recordings, data processing software, or other material, regardless of the physical form, characteristics, or means of transmission, made or received pursuant to law or ordinance or in connection with the transaction of official business by the City.

IF CONSULTANT HAS ANY QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES TO CONSULTANT'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS CONTRACT, CONTACT THE CITY'S CUSTODIAN OF PUBLIC RECORDS AT 321-567-3682, WANDA.WELLS@TITUSVILLE.COM, 555 S. WASHINGTON AVE., TITUSVILLE FL 32796.

IN WITNESS WHEREOF, the parties hereto have accepted, made, and executed this Agreement upon the terms and conditions above stated.

CONSULTANT:

By: _____

Authorized Name: ERIC SCHULTS
Title: PRESIDENT
Date: 2/18/26

OWNER:

By: _____

Authorized Name: Andrew Connors
Title: Mayor
Date: _____

ATTEST

_____
Wanda F. Wells, City Clerk

APPROVED AS TO FORM:
Legal Sufficiency
Office of the City Attorney

_____
Andriene Treasure, City Attorney

Date: 2/16/26

APPROVED AS TO CONTENT:

_____
Thomas Abbate, City Manager

Date: _____

Staff Review & Preparation:

_____ Date 2-16-26
Leslie A. Rothering, Purchasing & Contracting Administrator

_____ Date 2-23-26
Sandy Reller, Public Works Director

Documents attached:
Exhibit 1 – City's RFP Document, RFQ
Exhibit 2 – Consultant's Proposal
Attachments:
Attachment A - FEMA Contract Provisions
Attachment B - Contractor Certification Regarding Scrutinized Companies
Attachment C - Human Trafficking Affidavit
Attachment D - Public Entity Crime Affidavit
Attachment E - Drug-Free Workplace Certification
Attachment F - Truth-in-Negotiations Certification

Attachment A

FEMA CONTRACT PROVISIONS

Bonding Requirements for Construction Projects over $250k

For construction or facility improvement contracts or subcontracts exceeding the Simplified Acquisition Threshold ($250k), the Federal awarding agency or pass-through entity may accept the bonding policy and requirements of the non-Federal entity provided that the Federal awarding agency or pass-through entity has made a determination that the Federal interest is adequately protected. If such a determination has not been made, the minimum requirements must be as follows:

(a) A bid guarantee from each bidder equivalent to five percent of the bid price. The "bid guarantee" must consist of a firm commitment such as a bid bond, certified check, or other negotiable instrument accompanying a bid as assurance that the bidder will, upon acceptance of the bid, execute such contractual documents as may be required within the time specified.

(b) A performance bond on the part of the contractor for 100 percent of the contract price. A "performance bond" is one executed in connection with a contract to secure fulfillment of all the contractor's requirements under such contract.

(c) A payment bond on the part of the contractor for 100 percent of the contract price. A "payment bond" is one executed in connection with a contract to assure payment as required by law of all persons supplying labor and material in the execution of the work provided for in the contract.

TERMINATION FOR CAUSE AND CONVENIENCE

If, through any cause, the Contractor shall fail to fulfill in a timely and proper manner their obligations under this contract, or if the Contractor shall violate any of the covenants, agreements, or stipulations of this contract, the Owner shall thereupon have the right to terminate this contract by giving written notice to the Contractor of such termination and specifying the effective date thereof, at least five (5) days before the effective date of such termination. In such event, all finished of unfinished documents, data, studies, surveys, drawings, maps, models, photographs, and reports prepared by the Contractor under this contract shall, at the option of the Owner, become the Owner's property and the Contractor shall be entitled to receive just and equitable compensation for any work satisfactorily completed hereunder. Notwithstanding the above, the Contractor shall not be relieved of liability to the Owner for damages sustained by the Owner by virtue of any breach of the contract by the Contractor and the Oner may withhold any payments to the contractor for the purpose of set-off until such times as the exact amount of damages due to the Owner from the Contractor is determined.

The Owner may terminate this contract at any time by giving at least ten (10) days' notice in writing to the Contractor. If the contract is terminated by the Owner as provided herein, the Contractor will be paid for the time provided and expenses incurred up to the termination date.

BREACH OF CONTRACT TERMS

Any violation or breach of terms of this contract on the part of the Contractor or the Contractor's subcontractors may result in the suspension or termination of this contract or such other action that may be necessary to enforce the rights of the parties of this contract. The duties and obligations imposed by the contract documents and the rights and remedies available thereunder shall be in addition to and not a limitation of any duties, obligations, rights, and remedies otherwise imposed or available by law.

Small and Minority Businesses, Women's Business Enterprises, and Labor Surplus Area Firms

Owner encourages participation from small, minority-owned, women-owned, and labor surplus area business. Incorporation of these types of firms into the project team is encouraged.

(a) The non-Federal entity must take all necessary affirmative steps to assure that minority businesses, women's business enterprises, and labor surplus area firms are used when possible.

(b) Affirmative steps must include:

(1) Placing qualified small and minority businesses and women's business enterprises on solicitation lists;

(2) Assuring that small and minority businesses, and women's business enterprises are solicited whenever they are potential sources;

(3) Dividing total requirements, when economically feasible, into smaller tasks or quantities to permit maximum participation by small and minority businesses, and women's business enterprises;

(4) Establishing delivery schedules, where the requirement permits, which encourage participation by small and minority businesses, and women's business enterprises;

(5) Using the services and assistance, as appropriate, of such organizations as the Small Business Administration and the Minority Business Development Agency of the Department of Commerce; and

(6) Requiring the prime contractor, if subcontracts are to be let, to take the affirmative steps listed in paragraphs (1) through (5) of this section.

EQUAL EMPLOYMENT OPPORTUNITY

During the performance of this contract, the contractor agrees as follows:

1. The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, gender identity, or national origin. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex,

sexual orientation, gender identity, or national origin. Such action shall include, but not be limited to the following:

a. Employment, upgrading, demotion, or transfer
b. Recruitment or recruitment advertising
c. Layoff or termination
d. Rates of pay or other forms of compensation
e. Selection for training, including apprenticeship

The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.

2. The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, or national origin.

3. The contractor will not discharge or in any other manner discriminate against any employee or applicant for employment because such employee or applicant has inquired about, discussed, or disclosed the compensation of the employee or applicant or another employee or applicant. This provision shall not apply to instances in which an employee who has access to the compensation information of other employees or applicants as a part of such employee's essential job functions discloses the compensation of such other employees or applicants to individuals who do not otherwise have access to such information, unless such disclosure is in response to a formal complaint or charge, in furtherance of an investigation, proceeding, hearing, or action, including an investigation conducted by the employer, or is consistent with the contractor's legal duty to furnish information.

4. The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representatives of the contractor's commitments under this section and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

5. The contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.

6. The contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

7. In the event of the contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated, or suspended in whole or in part and the contractor may be declared ineligible for further Government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

8. The contractor will include the portion of the sentence immediately preceding paragraph (1) and the provisions of paragraphs (1) through (8) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance:

   Provided, however, that in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the administering agency, the contractor may request the United States to enter into such litigation to protect the interests of the United States.

   The applicant further agrees that it will be bound by the above equal opportunity clause with respect to its own employment practices when it participates in federally assisted construction work: *Provided,* That if the applicant so participating is a State or local government, the above equal opportunity clause is not applicable to any agency, instrumentality or subdivision of such government which does not participate in work on or under the contract.

   The applicant agrees that it will assist and cooperate actively with the administering agency and the Secretary of Labor in obtaining the compliance of contractors and subcontractors with the equal opportunity clause and the rules, regulations, and relevant orders of the Secretary of Labor, that it will furnish the administering agency and the Secretary of Labor such information as they may require for the supervision of such compliance, and that it will otherwise assist the administering agency in the discharge of the agency's primary responsibility for securing compliance.

   The applicant further agrees that it will refrain from entering into any contract or contract modification subject to Executive Order 11246 of September 24, 1965, with a contractor debarred from, or who has not demonstrated eligibility for, Government contracts and federally assisted construction contracts pursuant to the Executive Order and will carry out such sanctions and penalties for violation of the equal opportunity clause as may be imposed upon contractors and subcontractors by the administering agency or the Secretary of Labor pursuant to Part II, Subpart D of the Executive Order. In addition, the applicant agrees that if it fails or refuses to comply with these undertakings, the administering agency may take any or all of the following actions: Cancel, terminate, or suspend in whole or in

part this grant (contract, loan, insurance, guarantee); refrain from extending any further assistance to the applicant under the program with respect to which the failure or refund occurred until satisfactory assurance of future compliance has been received from such applicant; and refer the case to the Department of Justice for appropriate legal proceedings.

CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

1. *Overtime requirements.* No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

2. *Violation; liability for unpaid wages; liquidated damages.* In the event of any violation of the clause set forth in paragraph (1) of this section the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1) of this section, in the sum of $27 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1) of this section.

3. *Withholding for unpaid wages and liquidated damages.* (GRANT RECIPIENT OR SUBRECIPIENT) shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2) of this section.

4. *Subcontracts.* The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraphs (1) through (4) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (1) through (4) of this section.

Further Compliance with the Contract Work Hours and Safety Standards Act.

(1) The contractor or subcontractor shall maintain payrolls and basic payroll records during the course of the work and shall preserve them for a period of three years from the completion of the contract for all laborers and mechanics, including guards and watchmen, working on the contract. Such records shall contain the name and address of each such employee, social security number, correct classifications, hourly rates of wages paid, daily and weekly number of hours worked, deductions made, and actual wages paid.

(2) Records to be maintained under this provision shall be made available by the contractor or subcontractor for inspection, copying, or transcription by authorized representatives of the Department of Homeland Security, the Federal Emergency Management Agency, and the Department of Labor, and the contractor or subcontractor will permit such representatives to interview employees during working hours on the job

CLEAN AIR ACT AND THE FEDERAL WATER POLLUTION CONTROL ACT

Clean Air Act

1. The contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act, as amended, 42 U.S.C. § 7401 et seq.

2. The contractor agrees to report each violation to (APPLICANT NAME) and understands and agrees that (APPLICANT NAME) will, in turn, report each violation as required to assure notification to the Federal Emergency Management Agency, and the appropriate Environmental Protection Agency Regional Office.

3. The contractor agrees to include these requirements in each subcontract exceeding $150,000 financed in whole or in part with Federal assistance provided by FEMA.

Federal Water Pollution Control Act

1. The contractor agrees to comply with all applicable standards, orders, or regulations issued pursuant to the Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251 et seq.

2. The contractor agrees to report each violation to (APPLICANT NAME) and understands and agrees that (APPLICANT NAME) will, in turn, report each violation as required to assure notification to the Federal Emergency Management Agency, and the appropriate Environmental Protection Agency Regional Office.

3. The contractor agrees to include these requirements in each subcontract exceeding $150,000 financed in whole or in part with Federal assistance provided by FEMA.

DEBARMENT AND SUSPENSION

1. This contract is a covered transaction for purposes of 2 C.F.R. pt. 180 and 2 C.F.R. pt. 3000. As such, the contractor is required to verify that none of the contractor's principals (defined at 2 C.F.R. § 180.995) or its affiliates (defined at 2 C.F.R. § 180.905) are excluded (defined at 2 C.F.R. § 180.940) or disqualified (defined at 2 C.F.R. § 180.935).

2. The contractor must comply with 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C, and must include a requirement to comply with these regulations in any lower tier covered transaction it enters.

3. This certification is a material representation of fact relied upon by the Owner. If it is later determined that the contractor did not comply with 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C, in addition to remedies available to the Owner, the Federal Government may pursue available remedies, including but not limited to suspension and/or debarment.

4. The bidder or proposer agrees to comply with the requirements of 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C while this offer is valid and throughout the period of any contract that may arise from this offer. The bidder or proposer further agrees to include a provision requiring such compliance in its lower tier covered transactions.

PROCUREMENT OF RECOVERED MATERIALS

1. In the performance of this contract, the Contractor shall make maximum use of products containing recovered materials that are EPA-designated items unless the product cannot be acquired -

    a. Competitively within a timeframe providing for compliance with the contract performance schedule
    b. Meeting contract performance requirements; or
    c. At a reasonable price.

2. Information about this requirement, along with the list of EPA- designated items, is available at EPA's Comprehensive Procurement Guidelines web site, https://www.epa.gov/smm/comprehensive- procurement-guideline-cpg-program.

3. The Contractor also agrees to comply with all other applicable requirements of Section 6002 of the Solid Waste Disposal Act.

ACCESS TO RECORDS

1. The Contractor agrees to provide (APPLICANT NAME), (PASS THROUGH ETITY NAME), the FEMA Administrator, the Comptroller General of the United States, or any of their authorized representatives access to any books, documents, papers, and records of the Contractor which are directly pertinent to this contract for the purposes of making audits, examinations, excerpts, and transcriptions.

2. The Contractor agrees to permit any of the foregoing parties to reproduce by any means whatsoever or to copy excerpts and transcriptions as reasonably needed.

3. The Contractor agrees to provide the FEMA Administrator or his authorized representatives access to construction or other work sites pertaining to the work being completed under the contract.

4. In compliance with the Disaster Recovery Act of 2018, the applicant and the Contractor acknowledge and agree that no language in this contract is intended to prohibit audits or internal reviews by the FEMA Administrator or the Comptroller General of the United States.

DHS SEAL, LOGO, AND FLAGS

"The contractor shall not use the DHS seal(s), logos, crests, or reproductions of flags or likenesses of DHS agency officials without specific FEMA pre-approval."

COMPLIANCE WITH FEDERAL LAW, REGULATIONS, AND EXECUTIVE ORDERS

"This is an acknowledgement that FEMA financial assistance will be used to fund all or a portion of the contract. The contractor will comply with all applicable Federal law, regulations, executive orders, FEMA policies, procedures, and directives."

NO OBLIGATION BY FEDERAL GOVERNMENT

"The Federal Government is not a party to this contract and is not subject to any obligations or liabilities to the non-Federal entity, contractor, or any other party pertaining to any matter resulting from the contract."

PROGRAM FRAUD AND FALSE OR FRAUDULENT STATEMENTS OR RELATED ACTS

"The Contractor acknowledges that 31 U.S.C. Chap. 38 (Administrative Remedies for False Claims and Statements) applies to the Contractor's actions pertaining to this contract."

PROHIBITION ON CONTRACTING FOR COVERED TELECOMMUNICATIONS EQUIPMENT OR SERVICES

Prohibitions

1. Section 889(b) of the John S. McCain National Defense Authorization Act for Fiscal Year 2019, Pub. L. No. 115-232, and 2 C.F.R. § 200.216 prohibit the head of an executive agency on or after Aug.13, 2020, from obligating or expending grant, cooperative agreement, loan, or loan guarantee funds on certain telecommunications products or from certain entities for national security reasons.

2. Unless an exception in the following section of this clause applies, the contractor and its subcontractors may not use grant, cooperative agreement, loan, or loan guarantee funds from the Federal Emergency Management Agency to:
   i) Procure or obtain any equipment, system, or service that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology of any system;
   ii) Enter into, extend, or renew a contract to procure or obtain any equipment, system, or service that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology of any system;
   iii) Enter into, extend, or renew contracts with entities that use covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system; or
   iv) Provide, as part of its performance of this contract, subcontract, or other contractual instrument, any equipment, system, or service that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system.

Exceptions

1. This clause does not prohibit contractors from providing—
   i) A service that connects to the facilities of a third-party, such as backhaul, roaming, or interconnection arrangements; or
   ii) Telecommunications equipment that cannot route or redirect user data traffic or permit visibility into any user data or packets that such equipment transmits or otherwise handles.
2. By necessary implication and regulation, the prohibitions also do not apply to:
   i) Covered telecommunications equipment or services that:
      a. Are not used as a substantial or essential component of any system; and
      b. Are not used as critical technology of any system.
   ii) Other telecommunications equipment or services that are not considered covered telecommunications equipment or services.

Reporting requirement

1. In the event the contractor identifies covered telecommunications equipment or services used as a substantial or essential component of any system, or as critical technology as part of any system, during contract performance, or the contractor is notified of such by a subcontractor at any tier or by any other source, the contractor shall report the information in the following paragraph of this clause to the recipient or subrecipient, unless elsewhere in this contract are established procedures for reporting the information.
2. The Contractor shall report the following information pursuant to the preceding paragraph of this clause:
   i) Within one business day from the date of such identification or notification: The contract number; the order number(s), if applicable; supplier name; supplier unique entity identifier (if known); supplier Commercial and Government Entity (CAGE) code (if known); brand; model number (original equipment manufacturer number, manufacturer part number, or wholesaler number); item description; and any readily available information about mitigation actions undertaken or recommended.

ii) Within 10 business days of submitting the information in paragraph (C)(b)(i) of this clause: Any further available information about mitigation actions undertaken or recommended. In addition, the contractor shall describe the efforts it undertook to prevent use or submission of covered telecommunications equipment or services, and any additional efforts that will be incorporated to prevent future use or submission of covered telecommunications equipment or services.

Subcontracts

1. The contractor shall insert the substance of this clause, including this paragraph, in all subcontracts and other contractual instruments.

BYRD ANTI-LOBBYING AMENDMENT

Contractors who apply or bid for an award of $100,000 or more shall file the required certification. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, officer or employee of Congress, or an employee of a Member of Congress in connection with obtaining any Federal contract, grant, or any other award covered by 31 U.S.C. § 1352. Each tier shall also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the recipient who in turn will forward the certification(s) to the awarding agency.
See next page for required certification form.

BYRD ANTI-LOBBYING CERTIFICATION

Byrd Anti-Lobbying Certification for Contracts, Grants, Loans, and Cooperative Agreements

(To be executed with Agreement if Contract Sum exceeds $100,000)

Appendix A, 44 CFR Part 18- CERTIFICATION REGARDING LOBBYING

Certification for Contracts, Grants, Loans, and Cooperative Agreements

The undersigned [Contractor] certifies, to the best of his or her knowledge, that:

1. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

2. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form- LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

3. The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31, U.S.C. § 1352 (as amended by the Lobbying Disclosure Act of 1995). Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

The Contractor, EDGEWATER GROUP LLC, certifies or affirms the truthfulness and accuracy of each statement of its certification and disclosure, if any. In addition, the Proposer understands and agrees that the provisions of 31 U.S.C. § 3801 *et seq.*, apply to this certification and disclosure, if any.

Signature of Contractor's Authorized Representative

ERIK SCHULTS, PRESIDENT

Name and Title of Contractor's Authorized Representative

10/20/2025

Date

ATTACHMENT F

CONTRACTOR AFFIDAVIT REGARDING SCRUTINIZED COMPANY LIST

Awarded Contractor shall certify that it and its subcontractors are not on the Scrutinized Companies that Boycott Israel List. Pursuant to Section 287.135, F.S. If the Agreement is for more than $1,000,000 the Contractor further certifies that it and its subcontractors are also not on the Scrutinized Companies with Activities in Sudan, Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, or engaged with business operations in Cuba or Syria as identified in Section 287.135, F.S. For Contracts of any amount, if the City determines the Contractor submitted a false certification under Section 287.135(5) of the Florida Statutes, or if the Contractor has been placed on the Scrutinized Companies that Boycott Israel List, or is engaged in a boycott of Israel, the City shall either terminate the Contract after it has given the Contractor notice and an opportunity to demonstrate the City's determination of false certification was in error pursuant to Section 287.135(5)(a) of the Florida Statutes, or on a case-by-case basis the City may choose to maintain the Contract if the conditions of Section 287.135(4) of the Florida Statutes are met. For Contracts $1,000,000 and greater, if the City determines the Contractor submitted a false certification under Section 287.135(5) of the Florida Statutes, or if the Contractor has been placed on the Scrutinized Companies with Activities in the Sudan List, or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, the City shall either terminate the Contract after it has given the Contractor notice and an opportunity to demonstrate the City's determination of false certification was in error pursuant to Section 287.135(5)(a) of the Florida Statutes, or on a case-by-case basis the City may choose to maintain the Contract if the conditions of Section 287.135(4) of the Florida Statutes are met.

The Affiant, by virtue of the signature below, certifies that:

1. The Business address of Edgewater Group LLC (name of bidder or contractor) is 3020 N Federal Hwy Suite 10, Fort Lauderdale, FL 33306.
2. My relationship to Edgewater Group LLC (name of bidder or contractor) is President (relationship such as sole proprietor, partner, president, vice president).
3. I understand that "Boycott of Israel" has the same meaning as defined in §215.4725, Florida Statutes, and means refusing to deal, terminating business activities, or taking other actions to limit commercial relations with Israel, or persons or entities doing business in Israel or in Israeli controlled territories, in a discriminatory manner. A statement by a company that it is participating in a boycott of Israel, or that it has initiated a boycott in response to a request for a boycott of Israel or in compliance with, or in furtherance of, calls for a boycott of Israel, may be considered by the State Board of Administration to be evidence that a company is participating in a boycott of Israel. The term does not include restrictive trade practices or boycotts fostered or imposed by foreign countries against Israel.
4. I understand that "business operations" means, for purposes specifically related to Cuba or Syria, engaging in commerce in any form in Cuba or Syria, including, but not limited to, acquiring, developing, maintaining, owning, selling, possessing, leasing, or operating equipment, facilities, personnel, products, services, personal property, real property, military equipment, or any other apparatus of business or commerce.
5. Edgewater Group LLC (name of the bidder or contractor) is not on the Scrutinized Companies that Boycott Israel List, created pursuant to s. 215.4725, Florida Statutes, or is engaged in a boycott of Israel.
6. Edgewater Group LLC (name of the bidder or contractor) is not on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, created pursuant to s. 215.473, Florida Statutes.
7. Edgewater Group (name of the bidder or contractor) is not engaged in business operations in Cuba or Syria.

Signature	Erik Schults	President, Edgewater Group LLC
	Printed Name	Title Name of bidder or contractor

Notary Public Information

STATE OF Florida
COUNTY OF Broward

The foregoing instrument was acknowledged before me by means of ☑ physical presence or ☐ online notarization, this 20 day of October, 2025 (year), by Erik Schults (name of person acknowledging).

Isabella Bryson
(Print, Type, or Stamp Commissioned Name of Notary Public)

Isabella Bryson
(Signature of Notary Public)

Personally Known X OR Produced Identification _____ Type of Identification Produced _____

CONTRACT ATTACHMENT C

ATTACHMENT G

HUMAN TRAFFICKING AFFIDAVIT

In compliance with Section 787.06(13), Florida Statutes, this affidavit must be completed by an officer or representative of a nongovernmental entity that is executing, renewing, or extending a contract with the City of Titusville (the "Governmental Entity").

The undersigned, on behalf of the entity listed below (the "Nongovernmental Entity"), hereby attests under penalty of perjury as follows:

1. I am over the age of 18 and I have personal knowledge of the matters set forth herein.
2. I am an officer or representative of Edgewater Group LLC, a non-governmental entity and I am authorized to provide this affidavit on behalf of Nongovernmental Entity)
3. Nongovernmental Entity, and any of its subsidiaries or affiliates, do not use coercion for labor or services, as those terms are defined in Section 787.06, Florida Statutes, as may be amended from time to time.
4. If, at any time in the future, Nongovernmental Entity does use coercion for labor or services, Nongovernmental Entity will immediately notify Governmental Entity and no contracts may be executed, renewed, or extended between the parties.
5. I have read the foregoing affidavit and confirm that the facts stated in it are true, and are made for the benefit of, and reliance by Governmental Entity.

Company: Edgewater Group LLC
Authorized Signature: Erik Schults
Printed Name: Erik Schults
Title: President

STATE OF Florida
COUNTY OF Broward
The foregoing instrument was acknowledged before me by means of ☑ physical presence or ☐ online notarization, this 20 day of October, 2025, by Erik Schults, as President on behalf of the company/corporation. They ☑ are personally known to me or ☐ have produced _____ as identification.

Isabella Bryson
Notary Public Signature
Print, Type or Stamp Name of Notary: STAMP My commission expires: 06/08/2029

(Affix Notary Stamp or Seal)

ATTACHMENT H

PUBLIC ENTITY CRIMES

Any person submitting a bid, Bid or reply in response to this invitation or a contract, must execute the enclosed form PUR. 7069, sworn statement under section 287.133(3)(a), FLORIDA STATUTES, ON PUBLIC ENTITY CRIMES, including proper check(s), in the space(s) provided, and enclose it with his quote, bid, or proposal. If you are submitting a quote, bid or proposal on behalf of dealers or suppliers who will ship commodities and receive payment from the resulting contract, it is your responsibility to see that copy(ies) of the form are executed by them and are included with your quote, bid, or proposal. Corrections to the form will not be allowed after the quote, bid, or Bid opening time and date. Failure to complete this form in every detail and submit it with your quote, bid, or Bid may result in immediate disqualification of your bid or proposal.

The 1989 Florida Legislature passed Senate Bill 458 creating Sections 287.132 - 133, Florida Statutes, effective July 1, 1989. Section 287.132(3)(d), Florida Statutes, requires the Florida Department of General Services to maintain and make available to other political entities a "convicted vendor" list consisting of persons and affiliates who are disqualified from public contracting and purchasing process because they have been found guilty of a public entity crime. A public entity crime is described by Section 287.133, Florida Statutes, as a violation of any State or Federal law by a person with respect to and directly related to the transaction of business with any public entity in Florida or with an agency or political subdivision of any other state or with the United States, including, but not limited to, any bid or contract for goods or services to be provided to any public entity or with an agency or political subdivision and involving antitrust, fraud, theft, bribery, collusion, racketeering, conspiracy, or material misrepresentation.

A public entity may not accept any bid, Bid or reply from, award any contract to, or transact any business in excess of the threshold amount provided in Section 287.017, Florida Statutes, for CATEGORY TWO with any person or affiliate on the convicted vendor list for a period of 36 months following the date that person or affiliate was placed on the convicted vendor list unless that person or affiliate has been removed from the list pursuant to Section 287.133(3)(f), Florida Statutes.

Therefore, effective October 1, 1990, prior to entering into a contract (formal contract or purchase order in excess of the threshold amount provided in Section 287.017, Florida Statutes, for CATEGORY TWO) to provide goods or services to **THE CITY OF TITUSVILLE**, a person shall file a sworn statement with the contracting officer or Purchasing Director, as applicable. The attached statement or affidavit will be the form to be utilized and must be properly signed in the presence of a notary public or other officer authorized to administer oaths and properly executed.

THE INCLUSION OF THE SWORN STATEMENT OR AFFIDAVIT SHALL BE SUBMITTED CONCURRENTLY WITH YOUR BID, BID OR REPLY DOCUMENTS. NON-INCLUSION OF THIS DOCUMENT MAY NECESSITATE REJECTION OF YOUR QUOTE, OR BID.

SWORN STATEMENT UNDER SECTION 287.133(3)(a), FLORIDA STATUTES, ON PUBLIC ENTITY CRIMES

THIS FORM MUST BE SIGNED IN THE PRESENCE OF A NOTARY PUBLIC OR OTHER OFFICER AUTHORIZED TO ADMINISTER OATHS.

1. This sworn statement is submitted with the RFQ# CO26002/LR. Bid/Bid for THE CITY OF TITUSVILLE.

2. This sworn statement is submitted by Edgewater Group LLC whose business address is 3020 N Federal Hwy Suite 10, Fort Lauderdale, FL 33306 and (if applicable) its Federal Employer Identification (FEIN) is 88-3782656.

3. My name is Erik Schults (please print name of individual signing) and my relationship to the entity named above is President.

4. I understand that a "public entity crime" as defined in Paragraph 287.133(1)(g), Florida Statutes, means a violation of any state or federal law by a person with respect to and directly related to the transaction of business with any public entity or with an agency or political subdivision of any other state or with the United States, including, but not limited to, any bid, Bid, reply or contract for goods or services, any lease for real property, or any contract for the construction or repair of a public building or public work, involving antitrust, fraud, theft, bribery, collusion, racketeering, conspiracy, or material misrepresentation.

5. I understand that "convicted" or "conviction" as defined in Paragraph 287.133(1)(b), Florida Statutes, means a finding of guilt or a conviction of a public entity crime, with or without an adjudication of guilt, in any federal or state trial court of record relating to charges brought by indictment or information after July 1, 1989, as a result of a jury verdict, nonjury trial, or entry of a plea of guilty or nolo contendere.

6. I understand that an "affiliate" as defined in Paragraph 287.133(1)(a), Florida Statutes, means:

(1) A predecessor or successor of a person convicted of a public entity crime; or

(2) An entity under the control of any natural person who is active in the management of the entity and who has been convicted of a public entity crime. The term "affiliate" includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in the management of an affiliate. The ownership by one person of shares constituting a controlling interest in another person, or a pooling of equipment or income among persons when not for fair market value under an arm's length agreement, shall be a prima facie case that one person controls another person. A person who knowingly enters into a joint venture with a person who has been convicted of a public entity crime in Florida during the preceding 36 months shall be considered an affiliate.

7. I understand that a "person" as defined in Paragraph 287.133(1)(e), Florida Statutes, means any natural person or entity organized under the laws of any state or of the United States with the legal power to enter into a binding contract and which bids or applies to bid on contracts let by a public entity, or which otherwise transacts or applies to transact business with a public entity. The term "person" includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in management of an entity.

8. Based on information and belief, the statement which I have marked below is true in relation to the entity submitting this sworn statement. (Please indicate which statement applies.)

__X__ Neither the entity submitting this sworn statement, nor any officers, directors, executives, partners, shareholders, employees, members, or agents who are active in management of the entity, nor any affiliate of the entity have been charged with and convicted of a public entity crime subsequent to July 1, 1989.

_____ The entity submitting this sworn statement, or one or more of the officers, directors, executives,

partners, shareholders, employees, members or agents who are active in management of the entity, or an affiliate of the entity has been charged with and convicted of a public entity crime subsequent to July 1, 1989, AND (Please indicate which additional statement applies.)

_____ There has been a proceeding concerning the conviction before a hearing officer of the State of Florida, Division of Administrative Hearings. The final order entered by the hearing officer did not place the person or affiliate on the convicted vendor list. (Please attach a copy of the final order.)

_____ The person or affiliate was placed on the convicted vendor list. There has been a subsequent proceeding before a hearing officer of the State of Florida, Division of Administrative Hearings. The final order entered by the hearing officer determined that it was in the public interest to remove the person or affiliate from the convicted vendor list. (Please attach a copy of the final order.)

_____ The person or affiliate has not been placed on the convicted vendor list. (Please describe any action taken by or pending with the Department of General Services.)

Erik Schults
(Signature)

Date: 10/20/2025

Notary Public Information

STATE OF Florida

COUNTY OF Broward

The foregoing instrument was acknowledged before me by means of ☑ physical presence or ☐ online notarization,

this 20 day of October, 2025 (year), by Erik Schults (name of person acknowledging).

Isabella Bryson
(Print, Type, or Stamp Commissioned Name of Notary Public)

Isabella Bryson
(Signature of Notary Public)

Personally Known X OR Produced Identification _____ Type of Identification Produced _____

CONTRACT ATTACHMENT E

ATTACHMENT J

DRUG-FREE WORKPLACE CERTIFICATION

In case of tie bids, preference must be given to vendors submitting a certification with their bid/ Bid certifying they have a drug-free workplace in accordance with Section 287.087, Florida Statutes. The drug-free certification form below must be signed and returned with your bid.

In order to have a drug-free workplace program, a business shall:

(1) Publish a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the workplace and specifying the actions that will be taken against employees for violations of such prohibition. (2) Inform employees about the dangers of drug abuse in the workplace, the business' policy of maintaining a drug-free workplace, any available drug counseling, rehabilitation, and employee assistance programs, and the penalties that may be imposed upon employees for drug abuse violations. (3) Give each employee engaged in providing the commodities or contractual services that are under bid a copy of the statement specified in the first paragraph. (4) In the statement specified in the first paragraph, notify the employees that, as a condition of working on the commodities or contractual services that are under bid, the employee will abide by the terms of the statement and will notify the employer of any conviction of, or plea of guilty or nolo contendere to, any violation of chapter 893 or of any controlled substance law of the United States or any state, for a violation occurring in the workplace no later than five (5) days after such conviction. (5) Impose a sanction on, or require the satisfactory participation in a drug abuse assistance or rehabilitation program if such is available in the employee's community, by any employee who is so convicted. (6) Make a good faith effort to continue to maintain a drug-free workplace through implementation of this section.

As the person authorized to sign the statement, I certify that this Contractor complies fully with the above requirements.

Erik Schults	President	10/20/2025
Vendor's Signature	Title	Date

Notary Public Information

STATE OF Florida

COUNTY OF Broward

The foregoing instrument was acknowledged before me by means of ☑ physical presence or ☐ online notarization,

this 20 day of October (year), 2025, by Erik Schults (name of person acknowledging).

Isabella Bryson	Isabella Bryson
(Print, Type, or Stamp Commissioned Name of Notary Public)	(Signature of Notary Public)

Personally Known X OR Produced Identification _____ Type of Identification Produced _____

NOTARY PUBLIC STATE OF FLORIDA
Isabella Bryson
Commission # HH 685157
Commission Expires 06-08-2029
Bonded Through - Cynanotary
Florida - Notary Public

ATTACHMENT L

TRUTH IN NEGOTIATION CERTIFICATION

Pursuant to Section 287.055(5)(a), Florida Statutes, for any lump-sum or cost-plus-a-fixed fee professional services contract over the threshold amount provided in Section 287.017, Florida Statutes for CATEGORY FOUR, the City requires the Consultant to execute this certificate and include it with Proposed billable rates and all other negotiation documents requested.

The Consultant hereby certifies, covenants, and warrants that wage rates and other factual unit costs supporting the compensation for this project's agreement are accurate, complete, and current at the time of contracting.

The Consultant further agrees that the original agreement price and any additions thereto shall be adjusted to exclude any significant sums by which the City determines the agreement price was increased due to inaccurate, incomplete, or noncurrent wage rates and other factual unit costs. All such agreement adjustments shall be made within (1) year following the end of the contract. For purposes of this certificate, the end of the agreement shall be deemed to be the date of final billing or acceptance of the work by the City, whichever is later.

EDGEWATER GROUP LLC
Name of Consultant

By: ERIK SCHULTS 10/20/2025
Date

Notary Public Information

STATE OF FLORIDA
COUNTY OF BROWARD

Sworn to (or affirmed) and subscribed before me by means of ☑ physical presence or ☐ online notarization, this 20 day of OCTOBER, 2025, by (year)

ERIK SCHULTS.
(name of person acknowledging)

Isabella Bryson
Commission # HH 685157
Commission Expires 06-08-2029
Bonded Through - Cynanotary
Florida - Notary Public

Isabella Bryson
(Signature of Notary Public - State of Florida)

Isabella Bryson
(Print, Type, or Stamp Commissioned Name of Notary Public)

Personally Known ✓ OR Produced Identification _____

Type of Identification Produced _____

Edgewater Group

3020 N Federal Hwy, Ste 10, Fort Lauderdale, FL 33306 | 954.406.5389
58 Avenue E Apalachicola, FL 32320 | 850.220.5518

January 27, 2026

Leslie Rothering | Purchasing and Contracting
City of Titusville
555 S Washington Avenue
Titusville, FL 32781

Via Email: Leslie.Rothering@Titusville.com

RE: Titusville Marina Hurricane Repair Project – Edgewater Monthly Fee Schedule

Dear Ms. Rothering,

Pursuant to the City of Titusville's request, we hereby submit this proposal providing a detailed schedule of rates, fees, and level of effort of each task for professional engineering services associated with the marina hurricane repair project as follows:

I. BACKGROUND.

The City of Titusville Marina was damaged by Hurricane Milton in October 2024. Subsequently Edgewater Group performed a damage assessment and FEMA meetings were held virtually and on-site. We also reviewed of FEMA supplied documents determine the extent of damage.

Edgewater Group has been selected as the successful respondent to RFQ No. CO26-Q-002/LR to provide professional engineering and related services in support of the City of Titusville Marina hurricane repair project. This selection reflects Edgewater's experience delivering planning, design, permitting, and construction support services for public marina and waterfront facilities throughout Florida.

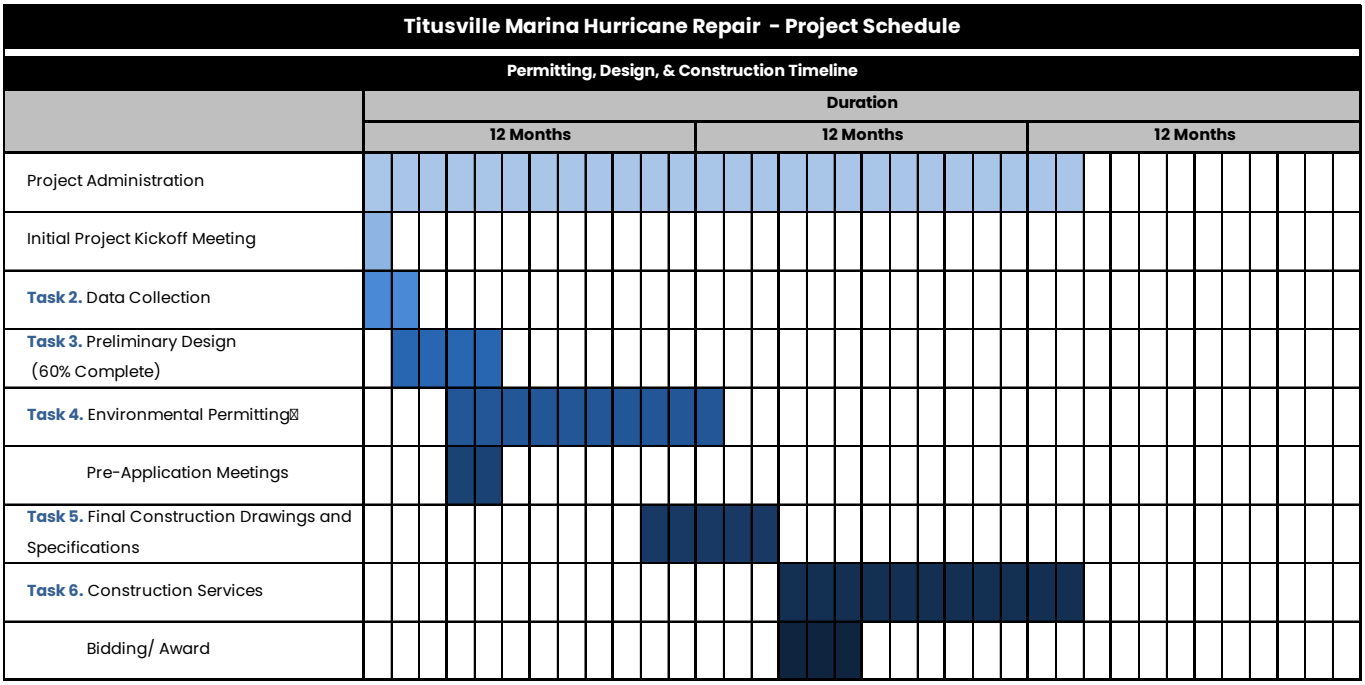
As requested by the City, Edgewater has prepared a detailed monthly fee and rate schedule corresponding to the tasks identified in the RFQ, including project phases, lump-sum fees, hourly rates, and estimated monthly levels of effort. We have also included the preliminary estimate for the project cost on the following page.

5/7/2025 Cost Estimate of Damages

Titusville Marina Post Milton Damage Estimate					
Location	**Item**	**Unit**	**Unit Cost**	**Quantity**	**Total**
Dock B	12" Dia. Timber Piling, 45' Long	EACH	3500	1	$3,500
				Subtotal Dock C	**$3,500**
Dock C	Full Replacement	SF	175	1650	$288,750
	12" Timber Piling	EACH	3500	32	$112,000
	14" Sq. Concrete Pile	EACH	12000	6	$72,000
	Timber Substructure (72LF of Bracing & Hardware)	LS	12000	1	$12,000
	Marine Power Pedestal	EACH	3000	40	$120,000
	Dock Box	EACH	1000	1	$1,000
	Fire Standpipe Connection	EACH	2500	1	$2,500
	Pumpout System	LS	95000	1	$95,000
	Electrical Line	LF	250	480	$120,000
	Domestic Water Line	LF	200	80	$16,000
	Dock Box	EACH	1200	1	$1,200
	Marine Electrical Substation	EACH	40000	1	$40,000
Dock E				**Subtotal Dock C**	**$880,450**
	Electrical Line	LF	250	630	$157,500
	Flotation	SF	130	280	$36,400
	Timber Waler	LS	600	1	$600
	Pile Guide	EACH	1500	1	$1,500
	Domestic Water Line	EACH	200	315	$63,000
	Marine Electrical Substation	EACH	40000	1	$40,000
	Marine Power Pedestal	EACH	4500	1	$4,500
	New Security gate and reinforce footings	EACH	15000	1	$15,000
Sitework				**Subtotal Dock E**	**$318,500**
	Broken Railing	LF	22	90	$1,980
				Subtotal Sitework	**$1,980**
				Subtotal	$1,204,430
				Soft Cost / Contingency (25%)	$301,108
				Total with Contingency	**$1,505,538**

II. PROPOSED PROJECT SCHEDULE

Below is our anticipated overall project schedule:



III. PROPOSED SCOPE OF SERVICES

We have identified the following scope of services to assist the City in this marina redevelopment:

TASK 1: Project Administration

This task includes overall project management and administrative support throughout the duration of the project. Services will include coordination with the City, preparation and distribution of meeting agendas and minutes, tracking of action items, monitoring of project schedule and budget, and providing general oversight to ensure the project progresses in accordance with the approved scope, timeline, and budget.

TASK 2: Data Collection

This task includes the collection and review of existing as well as new studies to be performed by the Edgewater team to support the marina renovation design. Specifically, this would include the following:

- Hydrographic survey (Completed by Edgewater)
- Natural Resources Inventory including benthic and other environmental fieldwork (Completed by Edgewater)
- Review prior soil borings
- Review and compilation of available drawings including, as-builts, permits, damage assessments, and utility plans.

TASK 3: Preliminary Design (60% Complete)

This task includes development of preliminary engineering designs to an approximate 60 percent level of completion so adequate detail can be provided for permit applications. Services will include preparation of preliminary layout plans, typical sections, and design concepts for the Dock B, C, and Dock E electrical design. During the Preliminary design phase, we will consider alternative for wave protection at the end of the T-head which may be able to protect the marina better moving forward . Coordination meetings with the City and FEMA will be conducted to review design alternatives, confirm design direction, and address comments. The 60% plans will be used for environmental permitting.

TASK 4: Environmental Permitting

This task includes preparation and management of required environmental permits applications and permit processing for the marina renovation project. Services will include conducting pre-application meetings with the St. Johns Water Management District, FDEP, and USACE, preparation and submittal of permit applications, development of supporting technical exhibits and narratives, and coordination with agency staff throughout the review process. This task also includes responding to Requests for Information (RFIs), permit conditions, and comments until permit issuance.

TASK 5: Final Construction Drawings and Specifications

This task includes the completion of the approved preliminary design and preparation of final construction drawings and technical specifications. Services will include incorporation of permitting conditions, City comments, and final engineering analyses. We will also ensure that the Final construction plans and specifications are compatible with FEMA's requirements for design and construction.

TASK 6: Construction Services

This task includes engineering support during bidding and construction. Services may include assistance with bid-phase questions, attendance at pre-bid and preconstruction meetings, review of shop drawings and submittals, responses to contractor RFIs, and periodic site visits to observe construction for general conformance with the construction documents. This task also includes coordination with the contractor and City, review of record drawings, and preparation of as-built documentation based on contractor-provided information.

IV. COST OF SERVICES

The proposed cost of services are as follows:

• Task 1: Project Administration	$11,910
• Task 2: Data Collection	$12,700
• Task 3: Preliminary Design (60% Complete)	$42,410
• Task 4: Environmental Permitting	$25,880
• Task 5: Final Construction Drawings and Specifications	$28,200
• Task 6: Construction Services	$23,730
• Reimbursable Expenses	$7,580
Total	**$152,410**

Exceptions:

The following exceptions apply:

1. Additional Soil Borings
2. Permit fees paid directly to agencies
3. Other special technical studies if required by FEMA, i.e.:
    - historical/archaeological
    - wind/wave analysis

V. CONCLUSION

Edgewater Group looks forward to partnering with the City of Titusville on this marina redevelopment project and bringing our experience in waterfront and marina engineering to support a successful and resilient outcome.

Sincerely,

Ronald E. Schults, PE
CEO
Edgewater Group LLC

Erik R. Schults, PE
President, Project Manager
Edgewater Group LLC

ESTIMATE OF WORK EFFORT – EDGEWATER GROUP

Titusville Marina Redevelopment in Titusville, Florida

Staff Classification		Engineering Staff					Environmental Staff			Intern/Admin		Total:
	Total Staff Hours	Principal Engineer	Sr. Project Engineer	Project Engineer	Staff Engineer	CAD Designer	Principal Environmental Scientist	Senior Environmental Scientist	Envrionmental Scientist	Professional Intern	Project Administration	
Task Description (Refer to Scope)		**$270**	**$215**	**$175**	**$150**	**$145**	**$225**	**$165**	**$145**	**$115**	**$95**	
TASK 1: Project Administration		10	24	18	6							$11,910
TASK 2: Data Collection	72	4	8	16	16	8	4	16				$12,700
TASK 3: Preliminary Design (60% Complete)	226	28	60	58	40	40						$42,410
TASK 4: Environmental Permitting	144	8	16				24	48	48			$25,880
TASK 5: Final Construction Drawings and Specifications	160	10	36	36	30	48						$28,200
TASK 6: Construction Services	126		62	32	32							$23,730
											Reimbursable Expenses	$7,580
											Total Edgewater Work Effort Cost:	**$152,410**

Edgewater Group

3020 N Federal Hwy, Ste 10, Fort Lauderdale, FL 33306 | 954.406.5389
58 Avenue E Apalachicola, FL 32320 | 850.220.5518

GENERAL TERMS AND CONDITIONS

1. The General Terms and Conditions outlined below are part of the attached letter agreement and are hereby incorporated by reference. If EDGEWATER GROUP LLC does not receive a response to the letter agreement within ninety (90) days, the fees and conditions for the design services will be subject to change. Please read these General Terms and Conditions carefully. Your acceptance of this agreement constitutes your acceptance of the foregoing terms and conditions.

2. The standard of care for all professional services performed or furnished by EDGEWATER GROUP LLC under this agreement will be the skill and care used by landscape architects, architects, engineers, and surveyors practicing under similar circumstances at the same time and in the same locality. EDGEWATER GROUP LLC makes no warranties, either express or implied, under this agreement or otherwise, in connection with EDGEWATER GROUP LLC services.

3. The Client shall provide EDGEWATER GROUP LLC with a development program and site information regarding the requirements and objectives for the Project. Additionally, EDGEWATER GROUP LLC shall be entitled to rely upon the accuracy and completeness of any information, reports and/or site surveys/base information supplied by the Client or by others authorized by the Client.

4. If EDGEWATER GROUP LLC services under this letter agreement do not include services during the construction phase of the project, then Client assumes all responsibility for the application and interpretation of EDGEWATER GROUP LLC drawings, specifications and other instruments of service; the observation and evaluation of Contractor's work and the performance of any other necessary construction phase landscape architectural or professional services; and Client waives any claims against EDGEWATER GROUP LLC that may be connected in any way there to.

5. Unless otherwise stated in the attached letter agreement, the Client shall pay all out of pocket expenses, in addition to professional fees. Out-of-pocket expenses are defined as actual expenditures made by EDGEWATER GROUP LLC,

their employees, and/or professional consultants, in the interest of the project and include, but are not limited to the following expenses:

a. Air Travel, including departure taxes (Business Class for flights scheduled for three
b. [3] hours or greater) and related airline/agency fees.
c. Hotel accommodations
d. Meals
e. Ground transportation, i.e., rental cars and taxis, private charter, public conveyance, and watercraft.
f. Postage, freight, overnight express mail, and courier services
g. Blueprinting, photocopying, reproductions, and printing
h. Photographic supplies and processing
i. Study model materials.
j. Special renderings, models, photographs and custom presentations, when authorized by Client.

The above-listed items will be billed at the actual cost. For specialty consultant services, as well as laboratory testing and analysis, Client will be charged an additional 10% fee by Edgewater.

6. All documents prepared or furnished by EDGEWATER GROUP LLC pursuant to this agreement are instruments of EDGEWATER GROUP LLC professional service. Upon payment in full for these professional services, EDGEWATER GROUP LLC shall grant joint ownership of such documents. Reuse, reproduction, modification of such documents by Client, without EDGEWATER GROUP LLC's written permission, shall be at Client's sole risk and Client agrees to indemnify and hold EDGEWATER GROUP LLC harmless from all claims, damages, and expenses, including attorney's fees, arising out of such reuse by Client or others acting through Client.

7. Client acknowledges that the information and data delivered to Client in machine editable copies of the documents, such as CAD files, may vary from that contained on paper copies of the documents and/or read-only digital media files, such as PDF files. Variances may be due to the use of different software, hardware, or output devices by
Client or others from those used by EDGEWATER GROUP LLC for original preparation and printing of the documents. The provided hard copies and/or read-only digital media shall govern in the event of any inconsistency or discrepancy between the two.

   Client acknowledges that the conversion of machine editable documents from the system or format employed by EDGEWATER GROUP LLC to that of Client or others cannot be accomplished without the introduction of inexactitude, abnormalities, and errors. In the event documents provided to Client in machine-readable form are so converted, Client agrees to assume all risks associated therewith and, to the fullest extent permitted by law, to hold harmless and indemnify EDGEWATER GROUP LLC and EDGEWATER GROUP LLC professional associates and consultants from and against all arising claims, liabilities, losses, and expenses including attorney fees.

8. All fees and reimbursable expenses will be invoiced monthly and shall be payable in net U.S. Dollars drawn upon a U.S. Bank unless otherwise stated in this letter agreement. The Client understands and acknowledges that these fees are net of any non-U.S. taxes and/or tariffs. If a retainer is received by EDGEWATER GROUP LLC it will be applied to the final payment due unless otherwise stated in this letter agreement.

9. In the event the Client should use a foreign bank as its payment bank, the Client shall wire the funds in U.S. Dollars, net of any transaction fees AND LOCAL TAXES (LOCAL TO THE PROJECT), to EDGEWATER GROUP LLC local bank using the following information:

Wiring instructions:

Account Name/Address:	EDGEWATER GROUP LLC 3020 N Federal Hwy, Suite 10 Ft. Lauderdale FL, 33306
ABA Bank Routing Number:	061112843
Bank Account Number:	111090015
Bank Name/Address:	United Community Bank 125 Highway 515 East Blairsville, GA 30512

10. All invoices are payable upon receipt. In the event payment is not received within thirty (30) days of invoice date, the past due balance may be assessed an interest penalty of one and one-half percent (1 ½%) per month.

    In the event EDGEWATER GROUP LLC does not receive payment within sixty (60) days, EDGEWATER GROUP LLC may stop work on the project until payment is received. Stoppage of work by EDGEWATER GROUP LLC due to non-payment of invoices beyond sixty (60) days will not be deemed as default under the terms of this letter agreement. An additional fee may be required to stop and restart work due to nonpayment.

11. In the event that the project is suspended for more than forty-five (45) days, through no fault of EDGEWATER GROUP LLC, EDGEWATER GROUP LLC shall be entitled to payment for services on a percentage of completion basis for all completed work.

12. The Client agrees that this letter agreement shall be interpreted according to the laws of the state where the contracting EDGEWATER GROUP LLC office is located and agrees to reimburse EDGEWATER GROUP LLC for reasonable attorney's fees, court costs, and all expenses including without limitation, all such fees, costs, and expenses incidental to arbitration, appeals, and post-judgment proceedings that it may expend in enforcing this letter agreement.

In the event of any such dispute, Client agrees that the court venue will be in Broward County, Florida, local to the EDGEWATER GROUP LLC office performing the work.

13. The signature of the attached letter agreement will signify the Client's acceptance of all the Terms and Conditions outlined herein. Accordingly, the Client warrants that the necessary funds are available to pay EDGEWATER GROUP LLC for the services and expenses outlined in this letter agreement and that these funds are not encumbered nor contingent upon subsequent approvals, permits or financing commitments.

14. The Client may terminate this Agreement without cause with ten days written notice and may terminate with cause upon seven days written notice by certified mail, facsimile, or private courier. The Client may direct EDGEWATER GROUP LLC to immediately stop work in the event of termination with cause.

    EDGEWATER GROUP LLC shall give the Client ten days written notice of EDGEWATER GROUP LLC's intention to terminate or suspend provision of services. This notice shall specify EDGEWATER GROUP LLC's reason(s) for the intended termination or suspension and shall state with specificity the means by which the Client may cure the asserted grievance. If the Client, through no fault of EDGEWATER GROUP LLC, fails to cure the asserted grievance within seven days thereafter, this Agreement may be immediately terminated by EDGEWATER GROUP LLC.

    In the event of termination, EDGEWATER GROUP LLC shall be compensated for all services fully and satisfactorily performed until such termination date, together with Reimbursable Expenses incurred.

15. This letter agreement will be valid for the duration of the project.

In no case shall EDGEWATER GROUP LLC liability exceed the amount of the fees for this agreement.

Edgewater Group

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b. [3] hours or greater) and related airline/agency fees.
c. Hotel accommodations
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e. Ground transportation, i.e., rental cars and taxis, private charter, public conveyance, and watercraft.
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15. This letter agreement will be valid for the duration of the project.

In no case shall EDGEWATER GROUP LLC liability exceed the amount of the fees for this agreement.

City of Titusville

"Gateway to Nature and Space"

REPORT

To: Members of the City Council

From: Thomas Abbate, City Manager

Subject: **Property Donation of Lot 5 Block 45 of Sun Valley Subdivision**

Department/Office: Public Works

Recommended Action:
Accept the donation of the property identified as Parcel ID No.: 22-35-28-01-45-5, Legal Description: Sun Valley Subdivision Lot 5 Block 45.

Summary Explanation & Background:
The City continues its ongoing effort to acquire properties within the Sun Valley Subdivision for wellfield protection, as this area is designated an area of critical concern. The owner of the property identified as Parcel ID No. 22-35-28-01-45-5, legal description, Sun Valley Subdivision, Lot 5, Block 45, has contacted the City to determine its interest in accepting the property as a donation. Estimated value per the BCPA is $450.

Alternatives:
Do not accept

Item Budgeted:
NA

Source/Use of Funds/Budget Book Page:

Strategic Plan:
Goal 2: Efficient & Effective Services

Strategic Plan Impact:
This item is in line with the goal of efficient and effective services by protecting access to the City's wellfield.

ATTACHMENTS:
1. Vescio Property Warranty Deed-Signed and Notarized

Instrument Prepared by and
After Recording Return to:

City of Titusville
Post Office Box 2806
Titusville, FL 32796-2806

WARRANTY DEED

THIS INDENTURE, made this 5th day of February, 2026, by **FRANK C. VESCIO**, whose address is 1640 3rd Street Southwest, New Brighton, Minnesota, **RONALD H. VESCIO**, whose address is 1000 Clydesdale Trail #117, Hamel, Minnesota, **JONATHAN J. VESCIO**, whose address is 3976 Glenview Avenue, Arden Hills, Minnesota, and **FREDRICK F. VESCIO,** whose address is 12801 Shannon Parkway, Rosemount, Minnesota (collectively the "**Grantors**"), owners of the real property located at Titusville, Forida, with Parcel ID: 22-35-28-01-45-5, and more particularly described below, to the **CITY OF TITUSVILLE**, a municipal corporation of the State of Florida (the "**City**"), whose address is 555 S. Washington, Titusville, Florida, 32796.

WITTNESSETH:

That Grantors, for the sum of TEN DOLLARS ($10.00), and other good and valuable consideration paid by the City, the receipt of which is hereby acknowledged, have granted, bargained, and sold to the City forever, the following described land, situate, lying, and being in the County of Brevard, State of Florida, *viz*:

> Lot 5 Block 45 of Sun Vally Subdivision, a subdivision of part of Section 28, Township 22 South, Range 35 East, according to the plat thereof as recorded in Plat Book 11, Page 29, Brevard County

And the Grantors do hereby fully warrant the title to said land, and will defend the same against the lawful claims of all persons whomsoever.

[The remainder of this page is intentionally left blank. Signature pages follow]

IN WITNESS WHEREOF, the Parties have caused this Warranty Deed to be executed and delivered under seal by their duly authorized representative as of the date first written above.

Signed, sealed and delivered
in the presence of:

Morgan Mittelstaedt
Witness #1
Name: Morgan Mittelstaedt
Address: 20496 Cadwall Lane
Rogers MN, 55374

Susan CV-Mittelstaedt
Witness #2
Name: Susan CV-Mittelstaedt
Address: 20496 Cadwall Lane
Rogers, MN 55374

GRANTORS:

Frank C. Vescio
FRANK C. VESCIO,

Morgan Mittelstaedt
Witness #1
Name: Morgan Mittelstaedt
Address: 20496 Cadwall Lane
Rogers MN, 55374

Susan CV-Mittelstaedt
Witness #2
Name: Susan CV-Mittelstaedt
Address: 20496 Cadwall Lane
Rogers, MN 55374

Ronald H. Vescio
RONALD H. VESCIO

Morgan Mittelstaedt
Witness #1
Name: Morgan Mittelstaedt
Address: 20496 Cadwall Lane
Rogers MN, 55374

Susan CV-Mittelstaedt
Witness #2
Name: Susan CV-Mittelstaedt
Address: 20496 Cadwall Lane
Rogers, MN 55374

Jon Vescio
JONATHAN J. VESCIO

Morgan Mittelstaedt
Witness #1
Name: Morgan Mittelstaedt
Address: 20496 Cadwall Lane
Rogers, MN 55374

Susan CV-Mittelstaedt
Witness #2
Name: Susan C V-Mittelstaedt
Address: 20496 Cadwall Lane
Rogers, MN 55374

FREDRICK F. VESCIO

STATE OF MINNESOTA)
) SS:
COUNTY OF HENNEPIN)

The foregoing instrument was acknowledged before me by means of ☒ physical presence or ☐ online notarization, this 5th day of February, 2026, by Frank C. Vescio. He is ☒ personally known to me or ☐ has produced _____ as identification.

SALLY J. SWANSON
Notary Public-Minnesota
My Commission Expires Jan. 31, 2030

Notary Public, State of Minnesota
Name: SALLY J. SWANSON
Commission No.: _____
My Commission Expires: _____

STATE OF MINNESOTA)
) SS:
COUNTY OF Hennepin)

The foregoing instrument was acknowledged before me by means of ☒ physical presence or ☐ online notarization, this 5th day of February, 2026, by Ronald H. Vescio. He is ☒ personally known to me or ☐ has produced _____ as identification.

SALLY J. SWANSON
Notary Public-Minnesota
My Commission Expires Jan. 31, 2030

Notary Public, State of Minnesota
Name: SALLY J. SWANSON
Commission No.: _____
My Commission Expires: _____

STATE OF MINNESOTA)
) SS:
COUNTY OF Hennepin)

The foregoing instrument was acknowledged before me by means of ☒ physical presence or ☐ online notarization, this 5th day of February, 2026, by Jonathan J. Vescio. He is ☒ personally known to me or ☐ has produced _____ as identification.

SALLY J. SWANSON
Notary Public-Minnesota
My Commission Expires Jan. 31, 2030

Notary Public, State of Minnesota
Name: Sally J. Swanson
Commission No.:_____
My Commission Expires:_____

STATE OF MINNESOTA)
) SS:
COUNTY OF Hennepin)

The foregoing instrument was acknowledged before me by means of ☒ physical presence or ☐ online notarization, this 5th day of February, 2026, by Fredrick F. Vescio. He is ☒ personally known to me or ☐ has produced _____ as identification.

SALLY J. SWANSON
Notary Public-Minnesota
My Commission Expires Jan. 31, 2030

Notary Public, State of Minnesota
Name: Sally J. Swanson
Commission No.:_____
My Commission Expires:_____

City of Titusville

"Gateway to Nature and Space"

REPORT

To: Members of the City Council

From: Thomas Abbate, City Manager

Subject: **Space Coast Health Foundation Grant to purchase the Handtevy Pediatric System from Pediatric Emergency Standards, Inc.**

Department/Office: Fire and Emergency Services

Recommended Action:

Accept grant funding from the Space Coast Health Foundation to support the first year of the program and approve the three-year price lock agreement with Pediatric Emergency Standards, Inc. for the purchase and implementation of the Handtevy Pediatric System, and approve a budget amendment to appropriate the grant funds and related expenditures: (1) Authorize the City Manager to execute the grant funding agreement from the Space Coast Health Foundation for the first year in the amount of $13,541, which includes the Learning Kit and Mobile App; (2) Authorize the city manager to execute the three-year price lock agreement with Pediatric Emergency Standards, Inc. for the Handtevy Pediatric System in the total amount of $28,128.85 for three years; and (3) Approve a budget amendment to appropriate the grant funds and associated expenditures.

Summary Explanation & Background:

The Fire Rescue Department currently utilizes the Handtevy Pediatric System to support pediatric emergency care in the field. This system has improved medication dosing accuracy, treatment consistency, and overall pediatric preparedness for emergency personnel.

The proposed 3-year price lock agreement represents an upgrade to the dedpartment’s existing system and will provide access to the Handtevy mobile application. This enhancement will allow personnel to access pediatric treatment protocols, medication dosing, and clinical decision support tools in real time from mobile devices during emergency responses. The upgrade will improve operational efficiency, reduce the potential for medication errors, and enhance patient safety during high-acuity pediatric incidents.

The Space Coast Health Foundation has awarded the City a grant in the amount of $13,541.00 to fund year one of this upgrade,with the condition that the City plans for annual renewals beyond the one year. As part of the grant requirements, the department will provide outcome-based reporting related to patient impact, high-acuity events, treatment accuracy, and protocol engagement. The grant will fully fund the first year of the program, with future costs included in the Fire Rescue operating budget with year two at $7,261.00 and year three at $7,479.35.

Staff is requesting City Council's approval to accept grant funding from the Space Coast Health Foundation to support the first year of the program and approve the three-year price lock agreement with Pediatric Emergency Standards, Inc. for the purchase and implementation of the Handtevy Pediatric System, and approve a budget amendment to appropriate the grant funds and related expenditures.

Alternatives:
Do not approve the agreement and grant acceptance. The department would continue using the existing Handtevy equipment without the mobile application upgrade, limiting access to real-time decision support and enhanced clinical tools in the field.

Item Budgeted:
No

Source/Use of Funds/Budget Book Page:

Source:	Local Grant	001-0000-337.20-30-FD2603	$13,541
Uses:	Software	001-0901-522.52-30-FD2603	$ 9,040
	Training	001-0901-522.55-01-FD2603	$ 1,198
	Operating Supplies	001-0901-522.52-01-FD2603	$ 3,150
	Postage	001-0901-522.42-01-FD2603	$ 153

Strategic Plan:
No. 2 – Efficient and Effective Services

Strategic Plan Impact:
This program supports the City's Strategic Plan goal of **Efficient and Effective Services** by improving the consistency, accuracy, and quality of pediatric emergency care. Implementation of the Handtevy Pediatric System standardizes treatment, reduces medication errors, and enhances clinical decision-making, resulting in more efficient operations and improved patient outcomes.

ATTACHMENTS:

1. Titusville Fire 12.25
2. Titusville 2026 3 year Handtevy Proposal (1)
3. Handtevy edits tb & Legal review Accepted v.4
4. BA - HANDTEVY PEDIATRIC SYSTEM

December 4, 2025

Titusville Fire Department
Chief John Hustoles
550 S. Washington Ave
Titusville, FL 32796

Dear Chief Hustoles,

The Space Coast Health Foundation (SCHF) provides grants to enhance or improve the health and wellness of Brevard County residents. We are excited to award you a grant in the amount of $13,541(THIRTEEN-THOUSAND, FIVE HUNDRED FORTY-ONE THOUSAND DOLLARS) to support the purchase of the Handtevy Mobile software application.

The grant period shall be for one year from the date of the issued award check. The proposed measurements for this grant are outlined below. Measurements will be submitted electronically through the SCHF online grant portal at six months and one year.

1. Proof of purchase for multi-year subscription of Handtevy Mobile
2. An Executive Summary including the following metrics
    - Patient impact, how many lives were directly touched by the program
    - High-acuity events, how often the platform guided care
    - Treatment accuracy and consistency identifying treatment pathways and medications accessed
    - Protocol engagement, how often crews are viewing protocols, checklists and other reference materials

To finalize this arrangement, please sign this Memorandum of Understanding to confirm your agreement to the terms and conditions outlined above and in Exhibit A. Once we receive the signed document along with your organization's IRS Form W-9, we will proceed with issuing the grant award check.

Thank you for collaborating to create a legacy of wellness for our community. We look forward to celebrating the success of your work.

Sincerely,

Johnette Gindling President/CEO Space Coast Health Foundation	Chief John Hustoles Fire Chief Titusville Fire Department

EXHIBIT A

Terms and Conditions

1. **Use of Funds**
   Grant funds must be used solely for the approved project purpose. Funds may not be used for political activity, lobbying, or voter registration efforts. Any unspent funds must be returned to the Foundation within 30 days of project completion, unless otherwise agreed in writing.

2. **Compliance and Monitoring**
   The Foundation may request access to records, reports, or personnel for the purposes of monitoring or evaluating the funded activities, consistent with applicable laws.

3. **Reporting Requirements**
   You agree to submit progress and/or final reports upon request. Instructions and due dates will be provided in advance.

4. **Acknowledgment and Publicity**
   You are welcome to publicize the grant with prior approval from the Foundation. We ask that any use of the Foundation's name, logo, or any related materials be submitted for review before distribution.

5. **Grant Results and Learning**
   We encourage you to share outcomes of the project with stakeholders, peers, and the public. The Foundation may also share results and highlights on its website and communications.

6. **Indemnification**
   Your organization agrees to hold the Foundation harmless from any claims or liabilities arising from your use of grant funds or program activities.

7. **Communication**
   Please notify us promptly if there are changes to the project scope, timeline, key contacts, or if you are unable to carry out the grant activities.

handtevy

Quote

Company Info: Pediatric Emergency Standards, Inc.
11860 State Rd 84 Suite B1
Davie, FL 33325

Expiration Date: 3/8/2026
Quote Number: Q-20733

Phone: (954) 944-1114
FAX: (954) 653-3792

Account Name: Titusville Fire & EMS
Account #: 100779

Client Contact: Jeffrey Harris
Account Rep: Patrick Bavaro

Bill To: 550 S Washington Ave
Titusville, FL 32796

Ship To: 550 S Washington Ave
Titusville, FL 32796

Product Code	Description	Due Date	Quantity	List Price	Unit Price	Total
HMPS25MY	Customization and Setup for Handtevy Mobile (One Time Fee)	Year 1	1.000	$1,990.00	$1,990.00	$1,990.00
QST25	Handtevy Quick Start Training includes: - One Virtual Hybrid Handtevy Instructor Course Seat - Maximize Handtevy Mobile User Workshops - Live - Handtevy Administrator Workshops - Live	Year 1	1.000	$599.00	$599.00	$599.00
HPB6100	Each Pediatric Bag includes: 7 Equipment Pouches Side Compartment Organizer	Year 1	5.000	$490.00	$490.00	$2,450.00
HPB004	Length-based measuring tape	Year 1	14.000	$50.00	$50.00	$700.00
HVIC23	Handtevy Virtual Instruction Course-Individual Instructor	Year 1	1.000	$599.00	$599.00	$599.00
HMPA25MY	Annual access to Handtevy Mobile. Access to Medication Management Software, Unlimited Clinical Updates Included, Clinical and Technical support	Year 1	1.000	$7,050.00	$7,050.00	$7,050.00
HMPA25MY	Annual access to Handtevy Mobile. Access to Medication Management Software, Unlimited Clinical Updates Included, Clinical and Technical support	Year 2	1.000	$7,261.50	$7,261.50	$7,261.50
HMPA25MY	Annual access to Handtevy Mobile. Access to Medication Management Software, Unlimited Clinical Updates Included, Clinical and Technical support	Year 3	1.000	$7,479.35	$7,479.35	$7,479.35

Total Price $28,128.85
Tax $0.00
Shipping and Handling $153.42
Total Due Now $13,541.42

To place an order, please email or fax a copy of the signed Quote and Purchase Order to:
accounting@handtevy.com or (954) 944-1114.

PES requires execution of a Purchase Order for all sales above $5,000 before applicable freight and taxes. The undersigned, on behalf of Customer, represents that he or she has the authority to sign this Quote and/or Purchase Order, and is bound hereby and agrees to the terms, conditions and pricing denoted and attached. Taxes, shipping and handling fees are estimates only and are subject to change at the time of order. Customer may provide PES with a tax exemption certificate, if applicable.

It is our customers responsibility to provide the most up-to-date and accurate protocol set. Additional fees will apply in the event a protocol set was submitted in error once customization has been initiated.

Handtevy/Pediatric Emergency Standards, Inc.

By: _____

Name: _____

Title: _____

Date: _____

City of Titusville

By: _____

Name: _____

Title: _____

Date: _____

ATTEST:

_____
Wanda F. Wells, City Clerk

Date _____

APPROVED AS TO FORM:

_____ Date _____
Andriene Treasure, City Attorney

STAFF REVIEW & PREPARATION:

_____ Date _____
Leslie A. Rothering, Purchasing & Contracting Administrator

_____ Date_____
John Hustoles, Fire Chief

EXHIBIT A *– Human Trafficking Affidavit*
EXHIBIT B *– Scrutinized Companies Affidavit*

Commented [TM1]: Would this be acceptable on the initial purchase?

PEDIATRIC EMERGENCY STANDARDS, INC.

TERMS AND CONDITIONS

1. DEFINITIONS.

a. "Agreement." The Quote, these Terms and Conditions, and the Purchase Order or the signed Quote and these Terms and Conditions shall constitute an agreement of the parties and be collectively referred to as the "Agreement."

b. "Customer" shall be identified as such on the Quote.

c. "Customer Data" means data entered by Customer relating to its patients that is entered into or transmitted through the PES Apps.

d. "Customer Protocols" means the medical practices, protocols, and guidelines adopted or used by Customer for patient care, including all drug concentrations, drug dosages, equipment sizes, and other practices adopted by Customer, formally or informally, from time to time.

e. "Customized" or "Customization" means changes to the PES Apps created by PES at Customer's request and for Customer's benefit in order for Customer to operate the PES Apps in a manner consistent with Customer's Protocols.

f. "Customized Offerings" means the PES Offerings that have been approved by Customer after Customization.

g. "Effective Date" means the date Customer delivers a signed Purchase Order to PES.

h. "Initial Term" means the thirteen (13) month period commencing on the Effective Date.

i. "PES" means Pediatric Emergency Standards, Inc.

j. "PES Apps" means the software application(s) licensed by Customer pursuant to this Agreement as referenced on the Quote.

k. "PES Materials" means any durable goods provided by PES to Customer as identified in the Quote.

l. "PES Offerings." The PES Apps, the PES Materials, and the PES Services are sometimes collectively referred to as the "PES Offerings."

m. "PES Services" means professional services provided by PES to Customer as identified in the Quote, which may include Customization, education and training courses, and other support services.

n. "Purchase Order" means a document signed by Customer evidencing acceptance of the Quote.

o. "Quote" means an offer by PES to provide certain PES Offerings at a price and on terms set forth therein and in these Terms and Conditions. These Terms and Conditions are incorporated into the Quote.

p. "Renewal Term" means a twelve (12) month period commencing on an anniversary of the Subscription Start Date in the event that Customer elects to renew this Agreement pursuant to Section 7(a) below.

q. "SaaS" means software-as-a-service.

r. "Subscription Start Date" means the date that is (i) thirty (30) days after the Effective Date, or (ii) such earlier date as agreed to in writing by PES and Customer.

s. The "Term" shall begin on the Effective Date and continue until this Agreement is terminated or not renewed by either party in accordance with Section 7 below.

t. "User" means any individual that is an employee of or is or works for a contractor of Customer and that uses PES Offerings, whether authorized by Customer to do so or not.

2. LICENSE.

a. License Grant. Subject to the terms of this Agreement, beginning on the Effective Date and during the Term, PES grants Customer a personal, non-exclusive license to access and use the PES Offerings. With respect to PES Apps, such license shall be in object code form only.

b. Customization. Clinical guidelines and related clinical content contained in the PES Offerings must be approved by Customer pursuant to the Customization process prior to use in connection with patient care. Between the Effective Date and the Subscription Start Date is a thirty (30) day grace period during which Customer shall complete the Customization process. Both PES and Customer will make reasonable efforts to ensure that Customer is "live" on the PES Apps as quickly as possible, however, in no event will the Subscription Start Date be modified for implementation delays due to Customer. Customer shall have an ongoing obligation to monitor and update the Customized Offerings to ensure consistency with Customer's Protocols, as Customer's Protocols may evolve over time. Customer shall submit a written request to PES for prompt revision and updating of the Customized Offerings when Customer or its medical staff, employees and/or contractors make modifications to Customer's Protocols.

c. Improvements. Customer agrees that any improvements or modifications to the PES Offerings shall belong to PES. Customer hereby grants, transfers and assigns (and agrees to grant, transfer and assign) to PES any and all of Customer's right, title and interest in and to such improvements or modifications. PES shall not be restricted in any manner in its use of any intellectual property created by it hereunder for Customer. The foregoing grant, transfer and assignment (and agreement to grant, transfer and assign) also applies to any enhancement or improvement recommended orally or in writing by Customer to PES.

d. Exclusions. The foregoing license does not include the right to, and Customer has no right to: (i) decompile, reverse engineer, disassemble, print, copy or display the PES Offerings in whole or in part or otherwise reduce the PES Apps to a human perceivable form in whole or in part; (ii) publish, release, rent, lease, sublicense, loan, sell, distribute or transfer all or any portion of the PES Offerings to another person or entity; (iii) use or reproduce the PES Offerings for the use or benefit of anyone other than in connection with Customer's business enterprise; (iv) alter, modify or create derivative works of the PES Offerings in whole or in part; (v) use or permit the use of the PES Offerings for commercial time-sharing arrangements or providing service bureau, data processing, rental, or other services to any third party, or (vi) use the PES Offerings or any part or aspect thereof for any unlawful purpose or to mislead or harass anyone. Use of or access to the PES Offerings in violation of the terms hereof is strictly prohibited. The rights granted Customer hereunder do not constitute a sale of any PES Offerings. PES retains all right, title, and interest in and to the PES Offerings, including without limitation all software used to provide the PES Apps (and access via the SaaS), all graphics, user interfaces, logos and trademarks reproduced through the SaaS, and all goodwill associated with any of the foregoing, except to the limited extent of Customer's license during the Term as set forth herein. Customer's permission to access or use the PES Offerings may be limited or suspended immediately if, in PES's discretion, this Section or any other provision of this Agreement has been violated by Customer or any of its Users. Customer agrees that a violation of this Section will cause PES irreparable and immediate harm, and that PES is entitled to injunctive relief to prevent such violation. Customer recognizes that the PES Offerings are protected by copyright and other laws.

3. FEES.

a. Fees. Throughout the Term, Customer shall pay PES the fees and other amounts (collectively, "Fees") for the PES Offerings as set forth in the Quote. Certain amounts set forth in the Quote, such as applicable taxes, duties, and shipping and handling fees for PES Materials, are estimates and may be subject to final pricing at the time of delivery. If applicable to Customer's business, Customer may provide PES with a tax exemption certificate.

b. Payment. In the case of PES Apps, Fees shall be due in full on the Subscription Start Date and each anniversary thereof. In the case of courses, payment must be made IN FULL at least twenty-four (24) hours prior to the course start time. In all other cases, Fees are due within forty-five (45) days of invoice.

c. Suspension of Services. PES may suspend Customer's access to and use of the PES Offerings if Customer fails to timely remit payment or is otherwise in material default hereunder. Any notices of default/termination and suspension may be combined.

d. Discounts. Items or services listed at no charge on a Quote are included as part of a package discount or a subscription offering. Customer is responsible for appropriately allocating the discount extended on package pricing when fulfilling any reporting obligations.

e. Fee Increases for PES Apps. Fees for PES Apps may increase by up to five percent (5%) each year, in the sole discretion of PES. Customer will be notified of any Fee increase at least thirty (30) days prior to the end of the Initial Term or Renewal Term, as applicable.

f. Fee Increases for PES Materials or PES Services. PES may institute Fee increases for PES Materials and/or PES Services without notice to its

Commented [TM8]: FD: Send this with agreement.

Commented [JH9R8]: Ok

Commented [TM10]: Can we change to Net 45?

Commented [PB11R10]: We can agree

Commented [TM1]: Define what is reasonable

Commented [PB2R1]: Responding to requests for required documents (protocols) and pharmacology, answering questions relating to build configurations, responding to scheduled training requests, etc.. There is a structured onboarding process that typically takes 4-6 weeks with most clients to be live. Ultimately the client is the final approval to go live.

Commented [TM12]: FD: Who will be designated to be notified?

Commented [JH13R12]: Whoever will be making the payment should be notified. Is this IT?

Commented [TM3]: FD: need to have a plan in place to monitor this obligation

Commented [JH4R3]: Ok

Commented [TM5]: FD: Define your expectation

Commented [JH6R5]: Expectation of "Prompt"? Is there a legal definition of this?

Commented [PB7R5]: Depends on the level of clinical configuration needed. An entire protocol revamp is different then updating a single section of the protocol or modifying a concentration carried. The latter are same day events, while the former depends on how revised the entire protocol guideline is. 90% of requests for modification from over 2,000 active clients is completed in less than 12 hours.

customers. Any such Fee increases would not be retroactively applied.

g. Taxes and Fees. Fees payable to PES are exclusive of all foreign, federal, state, and local taxes, including, without limitation, applicable sales, use, duty, customs, withholding, property, value-added, or similar sales-like taxes, tax-like charges, fees and liabilities, and credit card processing fees (but not including taxes based on PES's income) ("Taxes and Fees"), all of which shall be the responsibility of Customer. To the extent permitted by applicable law, Customer is responsible for and will remit (or will reimburse PES upon PES's request) such Taxes and Fees as may be paid by PES on Customer's behalf.

h. Appropriation of Funds. If Customer is a city, county or other government entity, the parties agree that Customer may terminate the PES Apps and PES Services at the end of the Customer's fiscal term for a failure by Customer's governing body to appropriate sufficient funds to enable Customer to acquire the PES Apps and/or PES Services for the next fiscal year. Notwithstanding the foregoing, this provision shall not excuse Customer from past payment obligations or other Fees earned and unpaid as of the end of such Customer's fiscal term. Moreover, Customer agrees to provide PES with reasonable documentation evidencing such non-appropriation of funds.

i. Third Party Payer. If a third party pays some or all Fees on behalf of Customer ("Third Party Payer"), the Third Party Payer must submit a Purchase Order directly. Customer shall immediately pay (and shall remain jointly and severally liable) for payment if the Third party Payer does not timely pay the Fees.

j. Late Fees. In the event that any Fees are not paid within forty-five (45) days of when due, such overdue amounts may, in the sole discretion of PES and to the extent permitted by applicable law, accrue interest until paid in full at a rate equal to the lesser of (i) one and one-half (1.5%) percent per month, or (ii) the maximum legal rate. Customer's payment will not waive or extend any obligation of Customer to make ongoing payments, as and when due.

k. Audit Rights. PES may reasonably audit Customer's use of the PES Offerings and charge Customer a higher Fee if Customer's usage includes facilities, Users, patient populations, or services beyond the scope determined in development of the Quote.

l. Supplemental Quotes and Purchase Orders. PES and Customer may execute and exchange additional or supplemental Quotes and/or Purchase Orders that will be subject to these Terms and Conditions and become part of this Agreement.

4. DELIVERY.

a. PES Apps. PES shall provide Customer access to PES Apps through a reasonable system of electronic downloads. PES shall grant Customer access promptly following completion of the Customization process.

b. PES Materials. Delivery dates for PES Materials are not guaranteed. In the absence of shipping instructions from Customer, PES will obtain shipping rates on the Customer's behalf and for Customer's account. Delivery shall be FOB PES, point of shipment, and title and risk of loss shall pass to the Customer once delivered to Customer's point of shipment. PES will not be liable for any loss or damage of any kind due to delays in delivery or non-delivery resulting from any cause including, but not limited to, acts of God, labor disputes, governmental authority or edict, war, civil unrest, terrorist acts, delays in manufacture, failure of Customer to obtain any required license or permit, or the inability of PES to obtain goods from its usual sources. Any such delay shall not be considered a breach of any obligation by PES, and the delivery dates shall be extended for the length of such delay.

5. SERVICE LEVEL AGREEMENT.

a. Hosting. PES shall be responsible for hosting and managing PES Apps.

b. Service Level Agreement. For each calendar month during the Term, PES shall use commercially reasonable efforts to ensure that the PES Apps accessed by Customer via SaaS will maintain a level of uptime equal to or better than ninety-nine percent (99%) (the "Service Level Agreement" or "SLA"). "Uptime" will be calculated using the following formula: Uptime = (T-TNF) x 100/T where "T" is the total number of hours that the PES App(s) is typically used per month (determined by multiplying the number of hours per day that the PES App(s) is typically used by the number of days per week that the PES App(s) is typically used, and multiplying the result by 4-5 weeks in a month), and "TNF" is the number of hours the PES App(s) or any component of the PES App(s) licensed by Customer under the applicable Purchase Order is not functional or otherwise unavailable during the month for any reason other than Scheduled Downtime (as defined below) or as a result of the Permitted Exclusions (as defined below) (the hours calculated will only include those hours that the such PES Apps would typically be in use). If any material portion of the total functionality of the PES Apps(s) is unavailable for operational use, the PES App(s) will be considered down from the time that Customer notifies PES that a PES App(s) is non-functional and the time that such PES App(s) is serviced and made available for use. A minimum of ninety-nine percent (99%) performance is based on the network hardware being operational.

A PES App will be not considered down if the reason for the unavailability is a result of: (i) Scheduled Downtime or (ii) a Permitted Exclusion.

If the SLA is not met in any calendar month (other than as a result of Scheduled Downtime or a Permitted Exclusion), PES shall provide Customer, as its sole and exclusive remedy, a credit equal to two percent (2%) of the prorated monthly Fee for the month that the PES App(s) was unavailable (the "Prorated Monthly Fee"), plus an additional one percent (1%) of the Prorated Monthly Fee for each one percent (1%) that applicable Uptime is less than 99%, up to an aggregate maximum credit of six percent (6%) of the Prorated Monthly Fee. PES shall calculate Uptime and any service level downtime using its system logs and other records.

c. Scheduled Downtime. If PES determines that it must intentionally interrupt the PES Apps or that there is a potential for the PES Apps to be interrupted to conduct system maintenance (collectively, "Scheduled Downtime"), PES will use good-faith efforts to notify Customer of such Scheduled Downtime at least forty-eight (48) hours in advance, and will use commercially reasonable efforts to ensure that Scheduled Downtime occurs during the hours of 12:00 a.m. to 6:00 a.m. Central Time.

d. Permitted Exclusions. Notwithstanding any other provision of this Agreement to the contrary, performance issues resulting from any of the following shall be considered a "Permitted Exclusion" for purposes of the SLA: (i) any force majeure or other event caused by factors outside of PES's reasonable control; (ii) any actions or inactions of Customer or any third parties; (iii) any third party or Customer-provided network, hardware, device or equipment failure; or (iv) general Internet operations problems. PES shall only be responsible for hardware and software upon which its PES Apps are hosted and its internet service provider up to the point its internet service provider connects with the public internet. Customer-provided network hardware support (i.e. fileservers, workstations, hubs, routers, etc.) is the responsibility of Customer.

e. Customer Must Request Service Credit. To receive a credit pursuant to Section 5(b), Customer must notify PES by email or otherwise in writing of its request, with receipt confirmation, within thirty (30) days of service interruption.

6. CUSTOMER DATA / PRIVACY.

a. Ownership and Use of Data. Except as provided below, unless it receives Customer's prior written consent, PES shall not: (i) access, process, or otherwise use Customer Data; or (ii) intentionally grant any third party access to Customer Data, including without limitation, PES's other customers, except PES subcontractors that are subject to a reasonable nondisclosure agreement. As between PES and Customer, all Customer Data shall be owned by Customer. Notwithstanding the foregoing, PES may use and disclose Customer Data to fulfill its obligations under this Agreement or as required by applicable law or by proper legal or governmental authority. To the extent that it is not prohibited from doing so by law or the terms of such legal or governmental demand, PES shall give Customer prompt notice of any such legal or governmental demand and reasonably cooperate with Customer in any effort to seek a protective order or otherwise to contest such required disclosure, at Customer's expense.

b. Anonymized Data. Notwithstanding any provision herein, PES may use, reproduce, license, or otherwise exploit Anonymized Data, provided that Anonymized Data does not contain and is not PHI (as defined in the Health Insurance Portability and Accountability Act or 1996 and its related regulations, as each may be amended). "Anonymized Data" means Customer Data with PHI and the names and addresses of Customer and its Users removed.

7. TERM; TERMINATION.

a. Renewal Upon Payment of Fees. Thirty (30) days prior to each anniversary of the Subscription Start Date, PES shall invoice Customer for Fees for the next twelve (12) month period. Payment of such Fees by Customer shall constitute a renewal of this Agreement for an additional twelve (12) month Renewal Term, during which time this Agreement may only be terminated

Commented [TM14]: Define reasonable - Is budget docs good?

Commented [PB15R14]: Yes, however, being that this is a Multi-year (3-year paid annually) agreement, budget documents would need to show/support budget wide cuts, not just a convenienced cut to Handtevy.

Commented [TM16]: FD: Will the grant be paying this or reimbursing after purchase?

Commented [JH17R16]: They will reimburse after purchase

Commented [TM30]: How will notification be sent? And to whom?

Commented [PB31R30]: Notifcations are sent to Handtevy Administrators of the department, and end users, if necessary. Department has control over who administrators are.

Commented [TM32]: We just need to note this in our records since we are on EST.

Commented [TM18]: Change to Net 45?

Commented [PB19R18]: We can agree

Commented [TM20]: FD: How will the number of user's be controlled? Is this only on City devices?

Commented [JH21R20]: Is this an IT question?

Commented [TM22R20]: Yes, I will get IT to address.

Commented [PB23R20]: Handtevy Mobile access is available for both unit devices (city owned) and personal devices, based on local policy. There is no PHI, HIPAA, or free form text box entry withing Handtevy Mobile. Provisioning and deprovisioning users is fully controlled at the FD level by your assigned Handtevy admins.

Commented [TM24]: Define "Promptly"

Commented [PB25R24]: Instantly once the final authorization is signed off on to go live by the FD authorized signed (primary admin)

Commented [TM26]: FOB Destination City

Commented [JH27R26]: What is FOB?

Commented [TM28R26]: Vendor: Please address as our policy is FOB Dest. City

Commented [PB29R26]: We are unable to modify automated shipping terms and processes client by client. We work with over 2,000 clients nationwide and cannot guarantee this is modified for the entirety of the term. Certain risk factors are evaluated when creating associated product costs.

either (i) by mutual agreement of the parties, or (ii) for Cause pursuant to Section 7(c) below.

b. Non-Renewal. Customer may elect not to pay Fees for a Renewal Term, in which event this Agreement and Customer's access to the PES Apps shall terminate at the end of the Initial Term or Renewal Term then in effect. PES may elect not to renew this Agreement for a Renewal Term by providing Customer with at least thirty (30) days advance written notice to the contact listed herein to receive official notices, in which event this Agreement and Customer's access to the PES Apps shall terminate at the end of the Initial Term or Renewal Term then in effect.

c. Termination for Cause. Either party may terminate this Agreement, and Customer's use of the PES Offerings, for "Cause" in the event that:

i. Either party breaches a material provision of this Agreement (which shall include non-payment of Fees) and such breach is not cured within 30 days after written notice is provided to the breaching party. Customer's access to the PES Offerings may be suspended during the 30-day cure period if the breach would cause potential damage to PES or otherwise renders Customer's continued use thereof unsafe;

ii. Either party files a petition in bankruptcy, whether voluntary or involuntary, or an assignment for the benefit of creditors, in which event termination shall be effective immediately; or

iii. Customer breaches or threatens to breach any of the provisions of: (A) Section 2(d) with respect to exclusions to Customer's license hereunder; or (B) Section 10 regarding confidentiality. Termination pursuant to this Section 7(c)(iii) shall be immediate upon written notice by PES to the contact listed herein to receive official notices.

d. Purchase Order Cancellation or Change. After the Effective Date, Purchase Orders may not be cancelled, changed, suspended or deferred without the express, written consent of PES. Customer agrees to pay all Fees and costs associated with any cancellation, change, suspension or deferral of a Purchase Order including, without limitation, for PES's Customization work and PES's efforts to mitigate damages. If PES agrees to allow cancellation of a Purchase Order, then this Agreement shall terminate as of the date of such mutual agreement, otherwise, this Agreement and Customer's obligation to pay Fees shall continue for the remainder of the Term.

e. Returns. PES Materials may be returned for a refund within thirty (30) days of the delivery date without penalty or restocking fee; provided, that returned PES Materials will not be accepted if they have been used or are not in good condition. Customized PES Offerings are non-refundable. If accepted, returned PES Materials are subject to a fifteen percent (15%) restocking fee. Return shipping fees are Customer's responsibility unless the product is damaged or does not conform to order specifications. If Customer desires to return PES Materials, Customer must first call PES Customer Service at 866.867.3192 and obtain a Return Goods Authorization Number (RGA#). Customer must then repackage PES Materials and mail them to Pediatric Emergency Standards, Inc., 11860 State Road 84, Suite B1, Davie, Florida 33325. PES Materials that are returned without prior authorization will be refused, and the carrier will charge Customer freight in both directions. If PES accepts returned items and issues a refund pursuant to this Section, then this Agreement shall terminate as of such refund date.

f. Effect of Termination. Upon any termination of this Agreement pursuant to this Section 7, Customer's license to use and access to the PES Offerings will immediately cease and all Fees due hereunder shall be immediately due and payable; provided, however, that, in the event Customer terminates this Agreement pursuant to Section 7(c)(i) as a result of an uncured breach by PES or pursuant to Section 7(c)(ii) in the event PES files a petition in bankruptcy or makes an assignment for the benefit of creditors, then Customer shall be relieved of any further obligation to pay Fees and PES shall refund to Customer prorated Fees already paid by Customer for the remainder of the Term. The applicability of certain provisions in this Agreement shall survive termination as set forth in Section 18(e) below.

8. SERVICE AND REPAIRS. Updates to the PES Apps shall be made available to Customer at no additional charge. All service and/or repairs are performed wholly or in part at the discretion of PES. PES Materials damaged in delivery will be replaced at no cost to the Customer. Damage caused by wear and tear, abuse or accident is at the expense of Customer. The remedies provided herein are exclusive.

9. DISCLAIMERS.

a. Disclaimer of Warranties. EXCEPT AS PROVIDED HEREIN, THE PES OFFERINGS ARE PROVIDED ON AN "AS IS" BASIS, AND PES EXPRESSLY DISCLAIMS ANY AND ALL WARRANTIES RELATED THERETO, INCLUDING BUT NOT LIMITED TO, WARRANTIES OF MERCHANTABILITY, NON-INFRINGEMENT, FITNESS FOR A PARTICULAR PURPOSE, AND OTHERWISE.

b. Disclaimers regarding Technology. Customer acknowledges that accessing data online involves risks of unavailability of information and Customer assumes such risks. Customer has sole responsibility for obtaining, maintaining and securing its connections to the Internet. PES makes no representations to Customer regarding the reliability, performance or security of any internet network or provider. PES cannot control the flow of data to or from its network and other portions of the internet as such flow depends, in large part, on the performance of internet service providers or third parties. At times, actions or inactions of such third parties may impair or disrupt Customer's connections to the internet (or portions thereof). Accordingly, PES disclaims any and all liability resulting from or related in any way to any unavailability of a PES App, including as a result of Scheduled Downtime or a Permitted Exclusion, and Customer acknowledges that its sole remedies in any such event are as set forth in Section 5(b). For these reasons, Customer further agrees to instruct its Users and all medical personnel to have hard copies of Customer's Protocols and the PES Materials or other backup options immediately available at all times in case access to the PES Apps is interrupted or otherwise becomes unavailable.

c. Disclaimers regarding Clinical Content.

i. PES makes no representations or warranties with respect to the clinical content contained in the PES Offerings and in the Customized Offerings approved by Customer.

ii. Clinical guidelines and related clinical content contained in the PES Offerings must be approved by Customer pursuant to the Customization process prior to use in connection with patient care. Customer shall have an ongoing obligation to monitor and update the Customized Offerings to ensure consistency with Customer's Protocols, as Customer's Protocols may evolve over time. Customer shall submit a written request to PES for prompt revision and updating of the Customized Offerings when Customer or its medical staff, employees and/or contractors make modifications to Customer's Protocols.

iii. Customer hereby acknowledges that the Customized Offerings are not a substitute for the judgment of licensed medical professionals. The Customized Offerings are tools that may assist medical professionals in the delivery of care to patients. All medical judgments are reserved to licensed clinicians. Failure to render care consistent with recognized standards of care may result in injury to the patient.

iv. Customer must determine for itself whether the PES Offerings will meet its needs, and PES makes no representations or warranties in that regard.

10. CONFIDENTIALITY.

a. Confidential Information. For purposes of this Agreement, the term "Confidential Information" means: (i) any non-public information of PES or Customer including, without limitation, information regarding the PES Offerings, information relating to current and planned products and services of PES and its technology, techniques, know-how, research, engineering, designs, finances, accounts, procurement requirements, manufacturing, customer lists, business forecasts and marketing plans; (ii) PES's security controls, policies, procedures, audits, or other information concerning PES's internal security posture; (iii) patient information obtained by Customer; (iv) any other information of a party that is disclosed in writing and is conspicuously designated as "Confidential" at the time of disclosure or that is disclosed orally and is identified as "Confidential" at the time of disclosure; and (v) this Agreement, including the Quote. Notwithstanding the foregoing, Confidential Information does not include information that: (A) is in the other party's possession at the time of disclosure; (B) is independently developed without use of or reference to Confidential Information; (C) becomes known publicly, before or after disclosure, other than as a result of a party's improper action or inaction; (D)is approved for release in writing by the disclosing party; or (E) is required to be disclosed by law.

b. Nondisclosure. The parties shall not use Confidential Information for any purpose other than to fulfill their respective obligations under this Agreement. Each party: (i) shall ensure that its employees or contractors are bound by confidentiality obligations no less restrictive than those contained herein; and (ii) shall not disclose Confidential Information to any third party without prior written consent from the disclosing party. Without

Commented [TM36]: FD Staff: to note this in operations

Commented [JH37R36]: We have hard copies already.

Commented [TM38]: FD staff: to note obligation

Commented [JH39R38]: Ok

Commented [PB33]: Cannot agree to remove. Handtevy customization & setup, shipments of durables, and printing of customized goods (when applicable) begin immediately upon receipt of PO. If a PO is cancelled several weeks after issuance, and work has already been completed on customized goods, PES reserves the right to reimburse for those items. Many of the products Handtevy offers are tailored to specific protocols and pharmacology of the clients we serve and cannot be repurposed or reused.

Commented [TM34R33]: Understood and agree.

Commented [PB35]: we can accept

Commented [TM40]: Handtevy to note that our agreements and Purchase records are subject to the F.S. Chapter 119 Public Records.

Commented [PB41R40]: Yes, we are aware

limiting the generality of the foregoing, the receiving party shall protect Confidential Information with the same degree of care it uses to protect its own confidential information of similar nature and importance, but with no less than reasonable care. A receiving party shall promptly notify the disclosing party of any misuse or misappropriation of Confidential Information of which it becomes aware.

c. Injunction. Customer agrees that breach of this Section would cause PES irreparable injury, for which monetary damages would not provide adequate compensation. In such instance, PES will be entitled to injunctive relief against such breach or threatened breach, without PES proving actual damages or posting a bond or other security, provided that if a judge determines that a bond is required, the parties agree that One Thousand Dollars ($1,000) shall be a reasonable bond.

d. Open Records Laws and other Disclosure Requests. PES acknowledges that Customer may be required to disclose certain Confidential Information if mandated by court order or, in the case of a Customer that is a governmental entity, pursuant to applicable open records laws or lawful public records requests. At such time as Customer becomes aware that it may be required to disclose Confidential Information, it agrees to (i) provide PES with prompt written notice in order to allow PES to protect its Confidential Information, object to the disclosure, and/or to seek a protective order, and (ii) cooperate with PES in such efforts. In addition to the obligations of this Section with respect to Confidential Information generally, Customer agrees to provide additional protection to PES source code information pursuant to Section 10(e) below.

e. Source Code. THE SOURCE CODE FOR THE PES APPS SHALL BE CONSIDERED HIGHLY CONFIDENTIAL INFORMATION UNDER THIS AGREEMENT AND MAY NOT, UNDER ANY CIRCUMSTANCE, BE DISCLOSED BY CUSTOMER TO ANY THIRD PARTY EXCEPT PURSUANT TO A VALID COURT ORDER.

f. Return of Confidential Information. Immediately upon termination of this Agreement or upon request, each party agrees to promptly return all Confidential Information and copies thereof belonging to the other party. If Customer is a governmental entity and required to retain certain Confidential Information after termination of this Agreement, then Customer shall retain only that portion of the Confidential Information that it is strictly required to retain under applicable law, return all other information to PES, and execute a reasonable non-disclosure agreement in connection with the retained Confidential Information..

11. INFRINGEMENT.

a. IP Infringement. PES shall defend and indemnify Customer from any damages, costs, liabilities, expenses (including reasonable and actual attorney's fees) actually incurred or finally adjudicated as to any third party claim or action alleging that the PES Apps infringe or misappropriate any third party's patent, copyright, trade secret or other intellectual property rights enforceable in the applicable jurisdiction (each a "Claim").

b. IP Remedies. If any PES Offering becomes, or in PES's opinion is likely to become, the subject of an infringement or misappropriation claim, PES may, at its option and expense, either (i) procure for Customer the right to continue using such PES Offering; (ii) replace or modify the PES Offering so that it becomes non-infringing; or (iii) terminate Customer's right to use the PES Offering and issue Customer a refund for any Fees for periods after such termination. Notwithstanding the foregoing, PES will have no obligation or otherwise with respect to any infringement or misappropriation claim based upon: (A) any use of the PES Apps not in accordance with this Agreement or for purposes not intended by PES; (B) any use of the PES Offerings in combination with other products, equipment, software, or data not supplied or authorized by PES, (C) any use of any release of the PES Apps other than the most current release made available to Customer at no additional charge; or (D) any modification of a PES Offering made by any person other than PES or an authorized representative or agent thereof. In any such case Customer will defend PES from any such claim against PES in accordance with Florida Statutes.

c. Sole IP Liability. This Section is PES's sole obligation and liability, and Customer's sole remedy, for potential or actual intellectual property infringement relating to the PES Offerings.

d. Procedures. The party seeking indemnification (the "Indemnified Party") must give prompt written notice of such Claim to the other party (the "Indemnifying Party"), accompanied by copies of any written documentation regarding the Claim received by the Indemnified Party. The Indemnifying Party shall compromise or defend, at its own expense and with its own counsel, any such Claim. The Indemnified Party will have the right, at its option, to participate in the settlement or defense of any such Claim, with its own counsel and at its own expense; provided, however, that the Indemnifying Party will have the right to control such settlement or defense. The Indemnifying Party will not enter into any settlement that imposes any liability or obligation on the Indemnified Party without the Indemnified Party's prior written consent. The parties will cooperate in any settlement or defense and give each other full access to all relevant information, at the Indemnifying Party's expense.

Any foregoing indemnification does not waive any defense of sovereign immunity and nothing contained in this section or elsewhere in this Agreement is in any way intended either to be a waiver of the limitation placed upon the City's liability as set forth in Section 768.28 Florida Statutes, or to extend the City's liability beyond the limits established in said Section 768.28 Florida Statutes; nor shall it be construed to constitute an agreement by any party to indemnify any other party for such party's negligent, willful, or intentional acts or omissions.

12. GOVERNMENT REGULATIONS. Each party agrees to comply with all applicable import, export and anti-corruption statutes and regulations of the United States in connection with the manufacture, sale and distribution of the PES Offerings including, without limitation, the Foreign Corrupt Practices Act. Each party agrees to indemnify and hold harmless the other from all claims, demands, damages, costs, fines, penalties, attorneys' fees and all other expenses arising from a party's failure to comply with this Section and/or applicable laws, rules and/or regulations governing the PES Offerings.

13. LIMITATION OF LIABILITY.

a. LIMITATION OF DAMAGES. UNDER NO CIRCUMSTANCES SHALL PES OR CUSTOMER BE LIABLE FOR ANY CONSEQUENTIAL, INDIRECT, SPECIAL, PUNITIVE OR INCIDENTAL DAMAGES, INCLUDING CLAIMS FOR DAMAGES FOR LOST PROFITS, GOODWILL, USE OF MONEY, INTERRUPTED OR IMPAIRED USE OF THE PES OFFERINGS, AVAILABILITY OF DATA, STOPPAGE OF WORK, OR IMPAIRMENT OF OTHER ASSETS.

b. LIMITATION OF LIABILITY. PES'S MAXIMUM LIABILITY FOR ALL CLAIMS OF LIABILITY ARISING OUT OF OR IN CONNECTION WITH THIS AGREEMENT SHALL NOT EXCEED FIVE (5) TIMES THE FEES PAID BY OR ON BEHALF OF CUSTOMER IN THE TWELVE (12) MONTHS IMMEDIATELY PRECEDING THE APPLICABLE CLAIM.

c. Insurance. Each party shall be responsible to carry insurance in appropriate amounts to cover the activities conducted by it under this Agreement. Upon written request, PES agrees to provide Customer with evidence of its insurance coverages.

14. DISPUTE RESOLUTION.

a. Limitation of Action. Except for claims arising from Customer's non-payment or underpayment of amounts owed to PES, any and all claims arising out of or related to this Agreement shall be barred, unless instituted either (i) **within two (2) years** from the date that the complaining party knew or should have known of the facts giving rise to a claim, or (ii) the applicable Florida statute of limitations, whichever is shorter.

b. Governing Law. This Agreement and any claim or controversy arising hereunder (whether in contract, tort, or otherwise, including statutory, consumer protection, or common law) shall be governed by the laws of the State of Florida, without regard to conflicts of law. The UN Convention for the International Sale of Goods and the Uniform Computer Information Transactions Act will not apply. In any dispute, each party will bear its own attorneys' fees and costs.

c. Mediation. In the event of any dispute, claim or disagreement arising out of or relating to this Agreement, the parties shall first submit the dispute, claim or disagreement to non-binding mediation administered by the American Arbitration Association (the "AAA") in accordance with its Commercial Mediation Procedures. The place of mediation shall be Brevard County, Florida. The mediation shall be conducted by one (1) mediator selected in accordance with AAA rules, unless the parties otherwise mutually agree to a panel of three (3) mediators.

d. Injunction. Notwithstanding anything in this Agreement to the contrary, each party shall be entitled, as not otherwise restricted by laws or statutes limitations and sovereign immunity, to seek injunctive or other equitable relief without first submitting the matter to mediation or arbitration in accordance

Commented [TM42]: Can vendor identify in advance what information they claim as exempt for F.S. Chapter 119?

Commented [PB43R42]: Unauthorized access to backend Handtevy Infrastructure (handtevy admin portal), providing login credentials to employees outside of the city, etc. are a few examples. These are all proprietary and could cause the company harm. Pricing agreements and Purchase Orders would fall under Chapter 119 as stated above.

Commented [PB44]: Cannot agree to remove. PES reserves the right to protect its IP.

Commented [TM45R44]: City Attorney please advise.

Commented [TM46R44]: Injunction is already included below. We can not agree to this as written. If it is a must in addition to 14 (d), then we request a proposed rewrite that it will be allowed to the limit of law and only due to actions or inaction of city staff.

Commented [PB50]: We can agree

Commented [TM47]: Define

Commented [PB48R47]: Depends on the level of the request. Usually within 30 days.

Commented [PB49]: Cannot agree to remove. PES reserves the right to protect its IP.

Commented [TM51]: FD Staff: request to include with PO

Commented [JH52R51]: What are we requesting?

Commented [PB53R51]: We will provide a COI

Commented [TM54]: Or an agreed upon location

Commented [PB55]: We can agree

with the provisions of this Section 14. The right to seek injunctive relief shall not be waived or limited by any prior referral of the dispute to mediation. Venue for any action permitted to be brought in court under this Section shall be the appropriate state and federal courts located in appropriate state or federal courts.

15. **SEVERABILITY.** If a provision of this Agreement is held to be invalid or otherwise unenforceable, such provision will be interpreted to fulfill its intended purpose to the maximum extent permitted by applicable law, and the remaining provisions of this Agreement will continue in full force and effect.

16. **NOTICE.** Notices provided under this Agreement must be in writing and delivered to PES's or Customer's principal place of business as forth in the Purchase Order and/or Quote by: (a) certified mail, return receipt requested; (b) hand delivery; (c) e-mail with a confirmed read receipt; or (d) reputable overnight carrier service. In the case of delivery by e-mail, the notice must be followed by a copy of the notice being delivered by a means provided in (a), (b) or (d). The notice will be deemed given on the day the notice is received by the party receiving such notice.

17. **DESIGN CHANGES.** Except as otherwise agreed expressly in writing, PES may at any time furnish improvements to a product's design and/or construction. PES may also furnish suitable substitutes for materials that are unobtainable because of priorities or regulations established by governmental authorities or the non-availability of products from suppliers.

18. **MISCELLANEOUS**.

a. Merger Clause. In entering into this Agreement, neither party is relying upon any representations or statements of the other that are not fully expressed herein or therein; rather each party is relying on its own judgment and due diligence and expressly disclaims reliance upon any representations or statement not expressly set forth in this Agreement. In the event Customer issues User instructions, internal memoranda, or any other document addressing any of the PES Offerings, it is hereby specifically agreed and understood that such writing is for the Customer's internal purposes only, and that any terms, provisions, and conditions contained therein shall in no way modify this Agreement.

b. Assignment & Successors. Neither party may assign, subcontract, delegate or otherwise transfer this Agreement or any of its rights or obligations hereunder, nor may it contract with third parties to perform any of its obligations hereunder except as contemplated in this Agreement, without the other party's prior written consent, except that either party may, without the prior consent of the other, assign all its rights under this Agreement to (i) a purchaser of all or substantially all of its assets, or (ii) a third party participating in a merger, acquisition, sale of assets or other corporate reorganization in which either party is participating (collectively, a "Change in Control"); provided however, that the non-assigning party is given notice to the contact listed herein to receive official notices, of the Change in Control and the assignee is not a competitor of the non-assigning party hereunder.

c. Force Majeure. No delay, failure, or default, other than a failure to pay Fees when due, will constitute a breach of this Agreement to the extent caused by acts of war, terrorism, hurricanes, earthquakes, other acts of God or of nature, riots or other acts of civil disorder, embargoes, or other causes beyond the performing party's reasonable control (collectively, "Force Majeure"). In such event, however, the delayed party must promptly provide the other party notice of the Force Majeure. The delayed party's time for performance will be excused for the duration of the Force Majeure, but if the Force Majeure event lasts longer than thirty (30) days, the other party may immediately terminate any unfulfilled Purchase Order.

d. Waiver & Breach. Neither party will be deemed to have waived any of its rights under this Agreement, unless it is an explicit written waiver made by an authorized representative. No waiver of a breach will constitute a waiver of any other breach.

e. Survival of Terms. Unless otherwise stated, all of PES's and Customer's respective obligations, representations and warranties under this Agreement which are not, by the express their terms, fully to be performed during the Term shall survive the termination of this Agreement. Without limiting the foregoing, the provisions of Terms and Conditions Sections 2(d), 6, 9, 10, 13, and 14 shall survive any termination of this Agreement.

f. Authority. An individual executing or delivering a Quote or a Purchase Order hereunder acknowledges that he or she has the authority to act on behalf of the Customer or PES, as the case may be, and bind such party to the terms hereof. Only a signed Purchase Order and PES quote document may be binding on the Customer's behalf.

g. Signatures. Electronic signatures on any portion of this Agreement (or copies of signatures sent via electronic means) are the equivalent of handwritten signatures and are fully enforceable.

h. **Public Records.** Records of the Contractor that are made or received in the course of performance of the Vendor's obligations under this agreement may be public records that are subject to the requirements of Chapter 119, Fla. Stat. and accordingly Contractor shall keep and maintain public records that ordinarily and necessarily would be required by the City in order to perform the service. However, some records may be confidential or exempt from disclosure under Chapter 119, Fla. Stat. In the event the Contractor receives a request for any such records, the Contractor shall notify the City and comply with Chapter 119, Fla. Stat. The Contractor shall not prepare any news or press release in any way related to this Contract, without the City's written consent. Contractor hereby agrees to comply with the following:

   a. As provided in Section 119.0701, Florida Statutes, the Contractor is required to, and by executing this Contract the Contractor agrees to:

      1) Keep and maintain public records that ordinarily and necessarily would be required by the City in order to perform the service.

      2) Upon request from the City's custodian of public records, provide the City with a copy of the requested records or allow the records to be inspected or copied within a reasonable time at a cost that does not exceed the cost provided in Chapter 119.07, Florida Statutes or as otherwise provided by law.

      3) Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law for the duration of the contract term and following the completion of the contract if the Contractor does not transfer the records to the City.

      4) (Upon completion of the contract, transfer, at no cost to the City, all public records in possession of the Contractor or keep and maintain public records required by the City to perform the service. If the Contractor transfers all public records upon completion of the contract, Contractor shall destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. If Contractor keeps and maintains public records upon completion of the contract, Contractor shall meet all applicable requirements for retaining public records. All records stored electronically must be provided to the City upon request from the City's custodian of public records in a format that is compatible with the information technology systems of the City.

   b. The term "public record" as used in this provision includes all documents, papers, letters, maps, books, tapes, photographs, films, sound recordings, data processing software, or other material, regardless of the physical form, characteristics, or means of transmission, made or received pursuant to law or ordinance or in connection with the transaction of official business by the City.

IF CONTRACTOR HAS ANY QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES TO VENDOR'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS CONTRACT, CONTACT THE

Commented [TM56]: What is the intent of adding this?

Commented [PB57]: This is a multi-year agreement paid annually. The PO would need to contain language/line items supporting costs for all 3 years, and include these T&Cs.

Commented [TM58R57]: Understood. Added the quote. The quote should include language to refer to these terms and no other T&Cs that have not been reviewed.

CITY'S CUSTODIAN OF PUBLIC RECORDS AT 321-567-3682, wanda.wells@titusville.com, 555 S. Washington Ave., Titusville FL 32796.

i. **Human Trafficking.** This Agreement also incorporates the "Human Trafficking Affidavit Form", **Exhibit A**, which is in accordance with Florida Statute 787.06(13) and must be signed. Pursuant to Section 787.06(13), Florida Statutes, as may be amended, Company represents, warrants, and certifies that Company does not use coercion for labor or services as defined in Section 787.06, Florida Statutes.

j. **Public Entity Crime.** By execution of this agreement, Company hereby certifies that neither it nor its affiliates(s) have been placed on the convicted vendor list following a conviction for a public entity crime, subsequent to October 1, 1989, in accordance with the provisions of Section 287.133 of the Florida Statutes.

k. **Scrutinized Companies.** This Agreement also incorporates the "Scrutinized Companies Affidavit Form", **Exhibit B**, which is in accordance with Sections 287.135, Florida Statutes, Company or Subcontractor acknowledges and agrees that the City may immediately terminate this Contract and any subsequent renewal Contract for cause if the Company or Subcontractor is found to have placed on the Scrutinized Companies or is engaged in a boycott of Israel during the Term of the Contract.

Budget Amendment/Transfer Form

Source of Funds:
FY2026

Account Number	Project Number	Description	Amount	Budget Amendment/ Budget Transfer
001-0000-337.20-30-FD2603	FD2603	LOCAL GRANTS/PUBLIC SAFETY	$ 13,541	Budget Amendment
		Total	**$ 13,541**	

Use of Funds:
FY2026

Account Number	Project Number	Description	Amount	Budget Amendment/ Budget Transfer
001-0901-522.52-30-FD2603	FD2603	OPERATING SUPPLIES/SOFTWARE	$ 9,040	Budget Amendment
001-0901-522.55-01-FD2603	FD2603	TRAINING	$ 1,198	Budget Amendment
001-0901-522.52-01-FD2603	FD2603	OPERATING SUPPLIES	$ 3,150	Budget Amendment
001-0901-522.42-01-FD2603	FD2603	FREIGHT AND POSTAGE SERVICE	$ 153	Budget Amendment
		Total	**$ 13,541**	

Input Name:	Budget Office Approval:	Notes:
		ACCEPT AND AUTHORIZE SPACE COAST HEALTH FOUNDATION GRANT TO PURCHASE HANDTEVY PEDIATRIC SYSTEM FOR FIRE DEPARTMENT
Input Date:	Budget Office Approval Date:	
Manual JE/BA#:	Post Date:	

City of Titusville

"Gateway to Nature and Space"

REPORT

To: Members of the City Council

From: Thomas Abbate, City Manager

Subject: **Brackish Source Water Feasibility Study**

Department/Office: Public Works

Recommended Action:

Award Task Order CDMTO003 to CDM Smith, Inc., in the amount of $96,290 to provide engineering consulting services for a feasibility study for a brackish water source, and authorize the Mayor to execute the Task Order. Additionally, approve the associated Budget Amendment.

Summary Explanation & Background:

The City of Titusville currently has three sources of ground water, the Area II wellfield, the Area III wellfield and the Area IV wellfield. Area II and III wellfields are part of the surficial aquifer. While Area IV is part of the Floridian aquifer. The City also purchases some water from the City of Cocoa. These sources combined make up the City's consumptive use permit issued by St John's River Water Management District. These sources combined currently are permitted to supply 6.01 MGD to the City which meets current demands and allows for excess capacity for development.

Increases in consumptive usage from these existing sources may be limited in the future. As a result, the Public Works department would like to begin exploring alternative sources of water.

As a result, the Public Works department has engaged CDM Smith, Inc to provide a proposal for a feasibility study to explore brackish water sources and evaluate concept level treatment facilities that would be needed. The feasibility study includes taking into consideration permitting requirements and financial impacts. The final deliverable will be a report outlining the findings and options along with recommendations for next steps.

The city has continuing service agreements with five engineering firms. These firms are typically utilized on a rotating basis to provide engineering support on an as-needed basis.

It is recommended that City Council approve the award of Task Order CDMTO003 to CDM Smith, Inc., in the amount of $96,290.00 to provide engineering consulting services for a feasibility study for a brackish water source, and authorize the City Mayor

to execute the Task Order.

Alternatives:
Do not award work order.

Item Budgeted:
See BA for funding

Source/Use of Funds/Budget Book Page:

401-5555-536.65-00 WR2601	Water System Expansion	$(96,290)
401-1607-536.31-01	Professional Services	$ 96,290

Strategic Plan:
Goal No. 2

Strategic Plan Impact:
This study aligns with planning for future capital improvement efforts.

ATTACHMENTS:
1. CDM TO003
2. Brackish Water Task- Signed
3. BA - BRACKISH FEASIBILITY STUDY

TASK ORDER FOR PROFESSIONAL ENGINEERING CONTINUING CONSULTING SERVICES AGREEMENT

City of Titusville
Purchasing & Contracting Division

Post Office Box 2806
(555 South Washington Avenue)
Titusville, FL 32781-2806
(32796-3584)

CONTRACT#:	CO23Q006 TB CDM Smith	**TASK ORDER#:**	CDMTO003
CONSULTANT:	CDM Smith Inc.	**PROJECT#:**	WR2601
ADDRESS:	101 Southhall La, Ste 200	**PROJECT NAME:**	Brackish Source Water Feasibility Study
	Maitland, FL		

By the signature affixed below, both the City and the Consultant agree to the following Contract work as per the Task Order stipulated herein. Upon proper execution of this document, the Consultant is hereby notified to commence work. All Task stated below is hereby incorporated and made a part of the Contract identified above. And all the terms and conditions of said Contract are incorporated herein and in full force and effect while executing the Task stipulated as follows:

Provide engineering consulting servuces for a feasibility study to explore brackish water sources and evaluate concept level treatment facilities that would be needed. The feasibility study includes taking into consideration permitting requirements and financial impacts. The final deliverable will be a report outlining the findings and options along with recommendations for next steps in accordance with CDM Smith consultant's proposal.

A)	TOTAL AMOUNT OF TASK AWARDED PRIOR TO THIS TASK ORDER	$ 117,460.00
	TOTAL AMOUNT FOR THIS TASK ORDER	$ 96,290.00
	TOTAL AMOUNT OF TASK AWARDED INCLUDING THIS TASK ORDER	$ 213,750.00
B)	TERM FOR THIS TASK ORDER	
	COMPLETION DATE FOR THIS TASK ORDER: _____ MM/DD/YYY or 6 months #of Days from NTP	

CONSULTANT *(Print)*:

Firm Name: CDM Smith Inc.

Authorized Staff Name _____

_____ _____
(Signature) **Date**

CITY OF TITUSVILLE:

_____
Andrew Connors, Mayor

_____ _____
(Signature) **Date**

ATTEST: _____ _____
City Clerk **Date**

Approved as to Content

_____ _____
(Signature) **Date**

_____
Tom Abbate, City Manager

City of Titusville - Staff Reviews

_____ _____ _____
Purchasing & Contracting Administrator *(Print)* **(Signature)** **Date**

_____ _____ _____
Department Director Name/Department *(Print)* **(Signature)** **Date**

SUBJECT: **City of Titusville**
Qualifications and Scope of Services for Engineering Consulting Services for Brackish Water Source Feasibility Study

CDM Smith (Consultant) is pleased to submit our qualifications and proposed scope of services for providing engineering consulting services to the City of Titusville (City) in response to the City's request. We understand the City Public Works Department requires assistance from a qualified Consultant to perform a feasibility-level evaluation to utilize brackish groundwater as a supplemental source of water for future growth, the ability to offset some of the existing wellfield usage and provide source reliability. This Task Order, when executed, shall be incorporated in and become part of the Non-Exclusive Professional Services Continuing Consulting Contract between the City and Consultant dated April 10, 2023, hereafter referred to as the Contract.

STATEMENT OF QUALIFICATIONS

The Consultant proposes to assign Ben Hayner, PE, PMP as the Consultant's Project Manager for this project. We enclosed copies of his resume including project experience history, and State of Florida PE license for the City's review to confirm that Ben Hayner, PE, PMP is a professional engineer licensed in the State of Florida and practicing in the design of water and wastewater infrastructure and facility projects.

WORK ITEMS

The Consultant's services proposed herein will include engineering services to provide a feasibility-level evaluation to utilize brackish groundwater as a supplemental water source for the City of Titusville. The evaluation will consider source, technical, regulatory, environmental, and financial aspects of developing brackish water infrastructure.

Task 1 – Data Gathering and Review

Consultant will review City's current Consumptive Use Permit (CUP) and staff report, surficial and Floridan aquifer wellfield data (Areas II, III, IV), plant record drawings and monthly operating reports (MORs) for existing water treatment facilities, St. Johns River Water Management District (SJRWMD) population projections, the existing Freshwater Management Evaluation, and other relevant planning documents. Consultant will identify data gaps and request additional information from the City as needed.

Task 2 – Source and Technical Assessment

Consultant will characterize the brackish water source, including aquifer identification, water quality, and sustainable yield. Brackish water sources for this evaluation will include the Upper Floridan Aquifer (UFA), Lower Floridan Aquifer (LFA), and the Indian River Lagoon (IRL). Consultant will evaluate extraction methods, potential well locations, and treatment technologies such as reverse osmosis (RO) and electrodialysis reversal (EDR). Consultant will evaluate up to three different water treatment alternatives, one for each source. Compatibility with existing treatment, storage, and conveyance infrastructure, as well as finished water blending strategies will be considered.

Task 3 – Regulatory and Environmental Assessment

Consultant will identify permitting requirements, potential environmental impacts, and compliance considerations. Consultant will assess current and future allocations and population data as dictated by the SJRWMD. Potential regulatory challenges and mitigation strategies will also be assessed.

Task 4 – Financial and Economic Evaluation

Consultant will develop conceptual-level cost estimates for well construction, conveyance pipelines, pump station, treatment facilities, and projected annual operation and maintenance (O&M) costs. A financial planning level feasibility analysis will compare brackish water development with alternative sources and assess potential funding options.

Task 5 – Brackish Water Source Feasibility Study Report

Consultant will prepare a written report summarizing findings from Tasks 1–4. The report will include recommendations, risks, and next steps. A digital draft report will be submitted for City review and comment. A final report will be provided following comment resolution.

Task 6 – Project and Quality Management

Activities performed under this task consist of those generally administrative functions required to maintain the project on schedule, within budget, and verify that the work products defined with this Task Order are consistent with the City's requirements and the Consultant's standards. The Consultant's Project Manager (PM) will be the primary point of contact for the City and will lead management activities, including invoicing. Project management functions to be completed over the period of performance are listed below:

- Prepare for and conduct a kickoff meeting.
- Set up project; track cost, personnel oversight, and status; manage records and file; and maintain budget.
- Prepare project invoices and monthly technical progress reports summarizing work completed, upcoming deliverables, and issues requiring decisions or actions.
- Perform a Technical Specialist Review of the report.
- Prepare written responses to City comments.
- Provide draft meeting minutes for City review and comment.
- Check that quality procedures are conducted in accordance with Consultant's Quality Management Plan.

Deliverable:

Brackish Water Source Feasibility Study Report

ASSUMPTIONS

Any work that is not included in the above-described services shall be classified as Additional Services. These additional services shall be performed at City's request with compensation adjustments through an amendment. This Task Order includes the following assumptions:

- City shall provide CUP documentation and relevant planning data.
- City shall provide plant record drawings and MORs.
- City shall provide access to existing wellfields and infrastructure data.
- Consultant will use available data as-is and will not update hydraulic models. City shall be responsible for, and Consultant may rely upon, the accuracy and completeness of reports, data, and other information furnished by City to Consultant pursuant to this task authorization. Consultant may use such reports, data, and information in performing or furnishing services under this authorization. Consultant's scope of work does not include verifying City provided information for accuracy or completeness. City may request an independent review of City provided information by Consultant and can be provided as an additional Task Order.
- A detailed review of water blending (water chemistry, stability, corrosion potential, etc.) is not included in this scope of work and can be included at a later stage in design.
- City shall provide data in digital format.

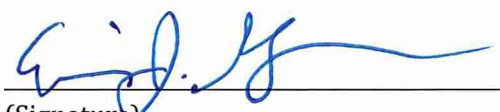
SCHEDULE

It is anticipated that the project will take 6 months to complete, starting within two weeks of receipt of a formal notice to proceed (NTP). The estimated schedule by task is shown below. Consultant will prepare an updated detailed schedule within the first 30 calendar days after NTP.

Task	Duration
Kickoff Meeting	2 Weeks from Start
Data Gathering and Review	4 Weeks from Kickoff
Draft Feasibility Report	12 Weeks from Data Gathering and Review
City Comment Period	2 Weeks from Draft Submittal
Final Feasibility Report	4 weeks from City Comments

EXECUTION OF QUALIFICATIONS AND SCOPE STATEMENTS

The undersigned Consultant Principal attests that the submitted qualifications and scope statements are accurate, are within the professional services practice and capability of the Consultant and subconsultants, and form the proposed basis for executing the Task Order.



(Signature)

2/26/26

(Date)

[END OF QUALIFICATIONS AND SCOPE STATEMENTS SECTION]

FEE PROPOSAL

The Consultant proposes to complete the professional consulting engineering services stipulated herein for the lump sum fee as listed below in the amount of $. Invoices will be submitted monthly based on the actual portion of the work performed (percentage of Task complete).

Tasks - Description	Estimated Value
Task 1 – Data Gathering and Review	$12,690
Task 2 – Source and Technical Assessment	$14,700
Task 3 – Regulatory and Environmental Assessment	$15,800
Task 4 - Financial and Economic Evaluation	$10,590
Task 5 -- Brackish Water Source Feasibility Study Report	$29,420
Task 6 – Project and Quality Management	$13,090
Task Order Total Lump Sum Fee	**$96,290**

EXECUTION OF FEE PROPOSAL

The undersigned Consultant Principal attests that the submitted fee proposal corresponds with the qualifications and scope statements and is the proposed basis for executing the Task Order.

(Signature)

2/26/26
(Date)

Budget Amendment/Transfer Form

Source of Funds:
FY2026

Account Number	Project Number	Description	Amount	Budget Amendment/ Budget Transfer
401-5555-536.65-00-WR2601	WR2601	NON-DEPARTMENTAL/CONSTRUCTION IN PROGRESS	$ (96,290)	Budget Amendment
		Total	**$ (96,290)**	

Use of Funds:
FY2026

Account Number	Project Number	Description	Amount	Budget Amendment/ Budget Transfer
401-1607-536.31-01		PROFESSIONAL SERVICES	$ 96,290	Budget Amendment
		Total	**$ 96,290**	

Input Name:	Budget Office Approval:	Notes:
		FUND BRACKISH WATER FEASIBILITY STUDY ENGINEERING CONSULTING SERVICES
Input Date:	**Budget Office Approval Date:**	
Manual JE/BA#:	**Post Date:**	

City of Titusville

"Gateway to Nature and Space"

REPORT

To: Members of the City Council

From: Thomas Abbate, City Manager

Subject: **Limited Bidding and Construction Services for Blue Heron Filter Project**

Department/Office: Public Works

Recommended Action:

Award Task Order # TOMH006 to Mead and Hunt in the amount of $90,259 to provide engineering consulting services including, but not limited to, providing bidding services and limited construction services for the Blue Heron Filter project, and authorize the Mayor to execute the Task Order.

Summary Explanation & Background:

The City Council previously approved the design effort to replace the existing sand filters at the Blue Heron plant with new filter technology. The design effort was completed. The City did not include bid and construction services in the design task as it was uncertain when funding would be available for construction.

In January 2026, the City Council authorized the use of debt services to secure funding for several projects, including the Blue Heron Filter project. As a result, the City has posted the project for bid.

The City has requested a proposal from Mead and Hunt, the design engineer, to provide limited bidding services which include answering technical questions during the bid process and limited construction services during construction which include shop drawing reviews, some inspections as required as the design engineer, and closing of the FDEP permit associated with the project as engineer.

In accordance with the existing contract, it was requested that Mead and Hunt provide a proposal in the amount of $90,259 to provide engineering consulting services including, but not limited to, providing bidding services and limited construction services for the Blue Heron Filter project, and authorize the Mayor to execute the Task Order.

Alternatives:

Do not award the Work Order and request third party CEI services

Item Budgeted:

Yes

Source/Use of Funds/Budget Book Page:
401-5555-536.65-00, WR2602, BH- Filter Replacements

Strategic Plan:
Goal No. 2

Strategic Plan Impact:
This project aligns with Goal No. 2 by investing in aging infrastructure by continuing to implement the project.

ATTACHMENTS:
1. Bidding & CEI TT Filters Proposal Final Revised
2. MHInc TO006

February 9, 2026

Ashleigh Smith
City Engineer
City of Titusville Public Works
2910 Garden Street
Titusville, FL 32796

Email: Ashleigh.Smith@Titusville.com

Subject: Bidding and EOR Services for City of Titusville Blue Heron WRF Filter Upgrades

Dear Ashleigh,

We are pleased to present the enclosed scope of services and fee estimate for bidding and construction phase services associated with the Blue Heron WRF Filter Upgrades project. The attached scope of services describes, in detail, what our firm understands to be required for technical services during construction, through project closeout.

Mead & Hunt designed and permitted the Blue Heron WRF Filter Upgrades project and will serve as the Engineer of Record through construction and permit closeout. This is a challenging project and will require maintenance of operations and filtration throughout the construction process. We have provided construction engineering and inspection (CEI) services for two other AquaDiamond installs within central Florida and have a thorough understanding of the process.

We appreciate this opportunity to continue to be of service. If you have questions or require additional information, please contact our office at any time.

Sincerely,
MEAD & HUNT, Inc.

Brad T. Blais, P.E.
Vice President/Client Manager

Noah Adamoski
Construction Services Supervisor

BTB/MDG;bf

CITY OF TITUSVILLE
SCOPE OF SERVICES
FOR
BIDDING AND EOR SERVICES FOR BLUE HERON WRF FILTER UPGRADES

This Task Order is in conformance with the Professional Services Continuing Consulting Contract CO23Q006 Utility Services Projects dated April 10, 2023, between the City of Titusville (OWNER) and Mead & Hunt, Inc. (MEAD & HUNT) and is referred to herein as the Contract.

PROJECT UNDERSTANDING

The project going to construction involves installation of two new AquaDiamond filters and associated electrical equipment within the existing filter basin at the City of Titusville's Blue Heron Water Reclamation Facility (WRF).

SCOPE OF SERVICES

After receipt of authorization to proceed, MEAD & HUNT will provide the following services:

PHASE 1 – PROJECT MANAGEMENT

Project Coordination

MEAD & HUNT's Project Manager (PM) will monitor and manage the project budget, schedule, and scope throughout the estimated 11-month project duration. The PM will manage the development of project work and subconsultant efforts.

PHASE 2 – BIDDING ASSISTANCE

The OWNER will be responsible for the overall solicitation for construction bids process, including any legal review of the bidding and contract documents (Division 0) and verifying compliance with OWNER purchasing and contract policies (Division 0 and 1). The OWNER will also be responsible for requests for bid advertisements, distribution of bidding documents, Prebid meeting, and bid opening. MEAD & HUNT will provide the following:

Bidding and Contract Documents

MEAD & HUNT will provide limited information for the OWNER's use in assembling the bidding and contract documents, including:

- Brief scope of construction work
- Suggested construction contract duration
- Schedule of unit work items
- Measurement and payment information corresponding to schedule of unit work items

MEAD & HUNT will also provide the final technical specifications (Divisions 2-49) and Construction Drawings (denoted as bid set). The OWNER will be responsible for distributing bidding documents to interested parties.

Pre-Bid Meeting

MEAD & HUNT will attend an in-person pre-bid meeting and present the project scope/intent; construction contract duration; design and permitting highlights and any special/supplemental conditions specific to the project. The OWNER will be responsible for the pre-bid meeting agenda, recording, and summary/minutes.

Addenda

MEAD & HUNT will respond to potential bidders' questions during the bid period. MEAD & HUNT will prepare suggested responses and provide the OWNER with a draft addendum for review. This scope of services assumes two (2) addenda will be completed. The OWNER shall be responsible for distribution of addenda.

Bid Opening

MEAD & HUNT will attend the bid opening at the OWNER's facility. The OWNER will be responsible for receiving, opening, and recording the bids.

Bid Review and Recommendation of Award

The OWNER will be responsible for receiving and reviewing bid documents and awarding to the lowest qualified bidder.

Deliverables – Bidding Assistance

- Bid Set Plans and Specifications
- Addenda to Bid Documents

PHASE 3 – ENGINEER OF RECORD (EOR) SERVICES DURING CONSTRUCTION

MEAD & HUNT will provide the following EOR services during construction, in conjunction with the CEI services being provided by the OWNER/others.

Issued for Construction Documents

MEAD & HUNT will incorporate applicable bid-phase modifications to the engineering drawings and technical specifications and provide those to the OWNER (in electronic format) for inclusion in the contract documents.

Deliverables – Issued for Construction Documents

- Issued for Construction Drawings (electronic PDF format)
- Issued for Construction Specifications (electronic PDF format)

Construction Submittal Review

MEAD & HUNT will review and respond to **up to 20 contractor construction submittals** and resubmittals regarding the design for compliance with the design and provide response to CEI team for response back to contractor per the construction contract requirements. MEAD & HUNT will maintain a detailed log of submittals and actions.

Deliverables – Construction Submittal Review

- Approved/Rejected Submittals
- Submittal log

Requests for Information (RFI's)

MEAD & HUNT will review **up to 10 contractor RFI's** related to clarification of the design intent and provide response to CEI team for response back to contractor per the construction contract requirements. MEAD & HUNT will maintain a detailed RFI log and actions/responses.

Deliverables – RFIs

- RFI responses
- RFI log

Construction Meetings

MEAD & HUNT will attend **up to two (2) Virtual construction meetings** organized by the OWNER and/or CEI team.

Site Visits

MEAD & HUNT will conduct up to six (6) site visits during construction to monitor construction. These visits may be combined with attendance of construction progress meetings, substantial/final completion reviews or other site visit needs.

Substantial and Final Completion Reviews

MEAD & HUNT will conduct a site review with the OWNER and CEI team to establish substantial or final construction completion. MEAD & HUNT will assist the OWNER and CEI team in identification of outstanding work items.

Permit Closeout

MEAD & HUNT will prepare and submit certifications of completion to the permitting agencies noted above in the Permitting section.

Deliverables – Permit Closeout

- Permit Completion Certifications.

PHASE 4 – PROJECT CLOSEOUT

Substantial and Final Completion

MEAD & HUNT will determine substantial completion and attend substantial and final walkthroughs. RPR will document the list of outstanding items at both substantial and final walkthroughs and verify completion of outstanding items before final closeout.

Deliverables – Substantial and Final Completion

- Substantial completion – list of outstanding items (electronic PDF format)
- Final completion – list of outstanding items (electronic PDF format)

As-Built Review and Record Drawings

MEAD & HUNT will review contractor final as-builts for compliance with the contract documents. Record drawings to be provided electronically to the OWNER.

Deliverables – As-Built Review and Record Drawings

- Acceptable Contractor As-Builts (Electronic PDF and AutoCAD Format)
- Record Drawings (Electronic PDF and AutoCAD Format)

Permitting Closeout

MEAD & HUNT will prepare and provide certifications of completion to the following permitting agencies for permit closeout:

- FDEP Minor Modification Permit

PHASE 5 – SUBCONSULTANTS AND REIMBURSABLES

Items under this phase include out-of-pocket direct job expenses such as subconsultants, reproductions, postage, etc. It is assumed permit application fees will be paid by the OWNER. Items included in this phase will be billed at actual cost.

RESPONSIBILITIES OF OWNER

This scope of services and compensation are based on the Owner performing or providing the following:

- A designated representative with complete authority to transmit instructions and information, receive information, interpret policy, and define decisions.
- Access to the project site.
- Protection of Mead & Hunt-supplied digital information or data, if any, from contamination, misuse, or changes.

ASSUMPTIONS AND LIMITATIONS

MEAD & HUNT prepared this Scope of Work based on discussions on 1/7/2026.

SCHEDULE

Mead & Hunt estimates the work included in this task order will be completed in accordance with the following schedule:

Phase/Task	Duration to Complete (calendar days)	Commencing Upon
Phase 1 – Project Management	*330 days*	*NTP*
Phase 2 – Bidding Assistance	*30 days*	*Approval of Proposal*
Phase 3 – Engineer or Record (EOR) Services During Construction	*300 days*	*OWNER award to Contractor/CEI Team*
Phase 4 – Project Closeout	*30 days*	*Substantial completion by contractor*

The above timeframes *do not* include permitting agency review time.

COMPENSATION

The not-to-exceed cost for this Scope of Services is $90,259.00.

The above fee is based on the following breakdown:

Phase/Task	Fee/Cost	Basis
Phase 1 – Project Management	*$8,319.00*	*Lump Sum*
Phase 2 – Bidding Assistance	*$9,963.00*	*Lump Sum*
Phase 3 – Engineer of Record (EOR) Services During Construction	*$56,743.00*	*Lump Sum*
Phase 4 – Project Closeout	*$5,734.00*	*Lump Sum*
Subtotal	**$80,759.00**	
Phase 5 – Subconsultants/Reimbursables	$9,500.00	*Actual cost*
TOTAL	**$90,259.00**	

Authorization

The Scope of Services and Compensation stated in this proposal are valid for a period of thirty (30) days from date of submission. If authorization to proceed is not received during this period, this proposal may be withdrawn or modified by Mead & Hunt.

Signatures of authorized representatives of the City of Titusville and Mead & Hunt shall convert this proposal to an Agreement between the two parties, and receipt of one signed copy shall be considered authorization to proceed with the work described in the Scope of Services.

MEAD AND HUNT, INC.

By: _____
Author/Submitter

Name: Matt Guzinski

Title: Engineer IV/Client Manager

Date: February 9, 2026

Approved by: MEAD AND HUNT, INC.

By: _____
Authorized Signer Review

Name: Brad Blais

Title: Vice President

Date: February 9, 2026

Accepted by: CITY OF TITUSVILLE

By: _____
The above person is authorized to sign for the Owner and bind the Owner to the terms hereof.

Name: _____

Title: _____

Date: _____

PURSUANT TO FLORIDA STATUTE SECTION 558.0035, AN INDIVIDUAL EMPLOYEE OR AGENT OF MEAD & HUNT INC. MAY NOT BE HELD INDIVIDUALLY LIABLE FOR NEGLIGENCE.

IF THE CONTRACTOR (MEAD & HUNT INC.) HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO THE CONTRACTOR'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS CONTRACT (PROPOSAL), CONTACT THE CUSTODIAN OF PUBLIC RECORDS AT CITY HALL, CITY OF TITUSVILLE, 555 S. WASHINGTON AVENUE, TITUSVILLE, FL 32796, City Clerk, Wanda Wells, MMC, Wanda.Wells@Titusville.com

TASK ORDER FOR PROFESSIONAL ENGINEERING CONTINUING CONSULTING SERVICES AGREEMENT

City of Titusville
Purchasing & Contracting Division

Post Office Box 2806
(555 South Washington Avenue)
Titusville, FL 32781-2806
(32796-3584)

CONTRACT#:	CO23Q006 TB MH	**TASK ORDER#:**	MHT0006
CONSULTANT:	Mead & Hunt Inc.	**PROJECT#:**	WR2602
			Limited Bidding and Construction Services
ADDRESS:	4401 Eastport Parkway	**PROJECT NAME:**	for Blue Heron Filter Project
	Port Orange, FL 3227		

By the signature affixed below, both the City and the Consultant agree to the following Contract work as per the Task Order stipulated herein. Upon proper execution of this document, the Consultant is hereby notified to commence work. All Task stated below is hereby incorporated and made a part of the Contract identified above. And all the terms and conditions of said Contract are incorporated herein and in full force and effect while executing the Task stipulated as follows:

Provide engineering consulting servuces to provide limited bidding services which include answering technical questions during the bid process and limited construction services during construction which include shop drawing reviews, some inspections as required as the design engineer, and closing of the FDEP permit associated with the project as engineer in accordance with Mead & Hunt Inc. consultant's proposal dated February 9, 2026.

A)	TOTAL AMOUNT OF TASK AWARDED PRIOR TO THIS TASK ORDER	$ 594,436.00
	TOTAL AMOUNT FOR THIS TASK ORDER	$ 90,259.00
	TOTAL AMOUNT OF TASK AWARDED INCLUDING THIS TASK ORDER	$ 684,695.00
B)	TERM FOR THIS TASK ORDER	
	COMPLETION DATE FOR THIS TASK ORDER: _____ MM/DD/YYY or 11 months #of Days from NTP	

CONSULTANT *(Print)*:

Firm Name: Mead & Hunt Inc.

Authorized Staff Name _____

_____
(Signature) **Date**

CITY OF TITUSVILLE:

_____
Andrew Connors, Mayor

_____
(Signature) **Date**

ATTEST: _____ _____
City Clerk **Date**

Approved as to Content

_____
(Signature) **Date**

_____
Tom Abbate, City Manager

City of Titusville - Staff Reviews

_____ _____ _____
Purchasing & Contracting Administrator *(Print)* **(Signature)** **Date**

_____ _____ _____
Department Director Name/Department *(Print)* **(Signature)** **Date**

City of Titusville

"Gateway to Nature and Space"

REPORT

To: Members of the City Council

From: Thomas Abbate, City Manager

Subject: **Task Order WPTO004 for Knox McRae Master Pump Station Project for Bidding and Construction Services**

Department/Office: Public Works

Recommended Action:
Award Task Order WPTO004 to Wright-Pierce, Inc, in the amount of $135,300 to provide engineering consulting services including, but not limited to, providing bidding services and limited construction services for the Knox McRae Master Pump Station project, and authorize the Mayor to execute the Task Order.

Summary Explanation & Background:
The City Council previously approved the design effort to replace the existing Master Pump Station with a new station. The Knox McRae facility was originally a wastewater plant and includes above ground digester tanks as storage along with other out-dated technology. The replacement station is to build a brand new station utilizing modern technology and City standards along with demo of the existing aged infrastructure. The design and permitting efforts are completed.

In January 2026, the City Council authorized the use of debt services to secure funding for several projects, including the Knox McRae Pump Station project. As a result, the City has posted the project for bid.

The City has requested a proposal from Wright-Pierce, Inc., the design engineer, to provide limited bidding services which include answering technical questions during the bid process and limited construction services during construction which include shop drawing reviews, inspections as required as the design engineer, and closing of the FDEP permit associated with the project as the engineer of record.

Alternatives:
Do not award proposal and seek third party CEI services.

Item Budgeted:
Yes

Source/Use of Funds/Budget Book Page:
401-5555-536.65-00, WR2603, LS-Master Pump Station

Strategic Plan:
Goal No.2

Strategic Plan Impact:
This task order aligns with investing aging infrastructure by moving forward services related to complete the Master Pump Station replacement.

ATTACHMENTS:
1. MPS Bidding and Construction Services Proposal
2. Attachment A - Fee Estimate 20260211
3. WPTO004

CITY OF TITUSVILLE, FLORIDA

WORK AUTHORIZATION

NEW MASTER PUMP STATION (LS 90) IMPROVEMENTS

BIDDING AND CONSTRUCTION

SCOPE OF SERVICES

Wright-Pierce, Inc., (Consultant) entered into a Professional Services Continuing Consulting Contract No. CO23Q006 (Agreement) with the City of Titusville, FL (City) on **April 5, 2023**, as selected pursuant to Florida Statute 287.055. Pursuant to this Agreement, the City has requested the Consultant provide certain professional services in support of the *New Master Pump Station (LS 90) Bidding and Construction* (Project). This Work Authorization outlines a scope of work subject to the conditions of the Agreement.

SECTION 1 - BACKGROUND

The City owns, operates, and maintains the South Master Wastewater Pumping Facility, which was installed in 1996 at 1135 Knox McRae Drive. The site serves as the location of the City's field operations but was the original location of the South Wastewater Treatment Facility (WWTF) before it was decommissioned and the 4.0 million gallon per day (MGD) annual average daily flow (AADF) Blue Heron Water Reclamation Facility (WRF) was placed into service. As a part of the decommissioning, the digesters remained to serve as wastewater storage tanks to feed the new pump station. During high flow conditions and weekly maintenance, raw wastewater from the City's force mains is directed into two (2) 50-foot diameter covered storage tanks. Each tank is equipped with a 15 horsepower (hp) mixer, diffused aeration system with 40 hp blower, and an odor control unit (deep-bed scrubber), all of which are no longer in service. The stored wastewater is pumped from the tanks via four, 25-hp above ground, centrifugal pumps to the Blue Heron WRF for treatment. Under normal flow conditions, the pump station is bypassed and wastewater travels directly to the Blue Heron WRF. The pumps and associated electrical panels are enclosed within a concrete block building. A separate room within the building houses the 500 KW diesel-powered emergency generator. The associated 2,000-gallon diesel storage tank is located outside and adjacent to the generator room.

The pumping facility is operated and controlled manually and does not include any automation or connection to the City's Supervisory Control and Data Acquisition (SCADA) system. As a result, the City would like to replace the existing pumping station with a new, submersible-type station, that adheres to the City's design and control standards. The new Master Pump Station (MPS) will include submersible pumps with variable frequency drives (VFDs), a prefabricated electrical building, emergency backup power or pumps, bypass capabilities, and an odor control system. Once the new MPS is in service, the existing digesters, blower building, odor control systems, emergency generator and associated fuel tank will be demolished. The existing MPS concrete building will remain, but the pumps, associated equipment and panels will be removed for the City to repurpose the structure.

The MPS design was completed, and final contract documents and opinion of probable construction cost (OPCC) were provided by the Consultant to the City in June 2024. Because of the duration between design completion and project advertisement, and the execution of a new Professional Services Continuing Consulting Contract, the City would like to close out the existing Work Order #6 (WPWR006) and establish a new Work Authorization for bidding assistance and limited construction phase services described in the following sections.

SECTION 2 - SCOPE OF SERVICES

PHASE 100 – PROJECT MANAGEMENT

Task 101 – Project Management

The Consultant will perform project management activities associated with the Project. These activities include planning and scheduling; managing staff, budgets and schedules; developing monthly status reports and invoices and communicating with the City. In addition, the Consultant will set up a SharePoint FTP site for this Project to facilitate exchange of information.

PHASE 200 – BIDDING SERVICES

The Consultant will assist the City during the Bid Phase of the project. The City shall be responsible for preparation of the front-end Contract Documents, advertisement of the Project, and distribution of the Project documents, including all costs associated therewith. The City will verify contractor bid tabulations and references, determine compliance with the Contract Documents, and issue the notice of award.

Task 201 – Pre-bid Meeting

1. After the City has advertised for bids, the Consultant will attend a Pre-bid Meeting, organized and conducted by the City, at the project site (or City offices).
2. The Consultant will provide an overview of the project and answer technical questions at the meeting from prospective bidders.

Task 202 – Review and Update Bid Documents

1. Consultant will provide the City with an updated opinion of probable construction cost (OPCC) and estimated construction schedule duration.
2. In the time between design completion (June 2024) and the City's project advertisement (January 2026), changes to specified equipment have occurred. The Consultant will review the plans and specifications to identify revisions needed to reflect current equipment, standards, and project information. Necessary revisions will be prepared for incorporation into addenda issued by the City during bidding. Documents will be provided to the City in pdf format.

Task 203 – Bidding Addenda

1. After the City has advertised for bids, the Consultant will assist the City by providing suggested answers to questions raised by bidders or documents for addendums to questions from Bidders.
2. The Consultant will assist with up to two (2) Bid Addenda, including drawing and specification modifications, and deliver electronically to the City for issuance to potential bidders.

Task 204 – Conformed Documents

1. The Consultant will prepare Conformed Documents (drawings and specifications) in CAD and Word formats, as well as PDF.
2. The Consultant will provide signed and sealed Conformed Documents in pdf format to the City.

PHASE 300 – CONSTRUCTION PHASE

The Consultant will provide limited construction phase services for the City during construction activities associated with the Project. The City will perform daily inspections, review and approve contractor pay applications, and provide general coordination efforts. The proposal assumes the construction duration will not exceed 18 months.

Task 301 – Construction Meetings

1. The Consultant will attend virtual City/Contractor-led construction meetings, as requested. Attendance at the following meetings is included in the scope of services:
    a. Pre-construction meeting (1 in-person meeting)
    b. Construction progress meetings as requested by the City (4 virtual meetings)

Task 302 – Site Visits

1. The Consultant will provide up to 14 site visits (not including substantial and final completion) for an average of one visit per month during active construction of the Project to review the construction of the Project for general conformance with the Contract Documents.
2. Consultant will coordinate site visits with City Project Manager to review and discuss construction items on-site with City staff and Contractor.

Task 303 – Submittals

1. The Consultant will set up a SharePoint FTP site for the exchange of information and construction submittals.
2. The Consultant will review Contractor's shop drawings and one Operation and Maintenance (O&M) manual for general conformance with the Contract Documents. The Consultant will provide the shop drawing review comments to the City for distribution to the Contractor.
3. It has been assumed that for this task, forty (40) submittals will be provided, including submittals and re-submittals.
4. The Consultant will maintain a Shop Drawing Review Log which will be made available to the City, at their request.

Task 304 – Requests for Information

1. The Consultant will receive, review, track, and provide responses to Requests for Information (RFIs), submitted by the Contractor. As part of this function, the Consultant will coordinate with the City to incorporate City reviews and review comments into the RFI review process. The City will provide the final RFI responses to the Contractor.
2. It has been assumed that for this task up to five (5) RFIs will be submitted and responses provided.
3. The Consultant will maintain an RFI Review Log which will be made available to the City, at their request.

Task 305 – Startup and Testing

1. The Consultant will, in conjunction with Contractor and City representatives, assist with the check-out and start-up of the equipment and ancillary systems.
2. The Consultant will attend a single startup and testing meeting to verify the installed equipment operates per the Contract Documents.

Task 306 – Substantial Completion

1. The Consultant will, in conjunction with other City representatives, conduct a Substantial Completion walk through of the project to determine if the Work is completed substantially in accordance with the Contract Drawings, Technical Specifications and other Contract Documents.
2. The City will prepare the punch list of items to be completed to reach final completion with input provided by the Consultant.
3. It has been assumed that a single, substantial completion walkthrough will be performed.

Task 307 – Final Completion

1. The Consultant will, in conjunction with other City representatives, conduct a Final Completion walkthrough of the project to determine if the Work and punch list is complete in accordance with the Contract Drawings, Technical Specifications and other Contract Documents.
2. It has been assumed that a single, final completion walkthrough will be performed.

Task 308 – Project Closeout

1. The Consultant, based on review of as-builts and field observations, will prepare an As-Built Certification and Request for Conversion to Operation Phase for the stormwater management system to the Florida Department of Environmental Protection (FDEP) certifying the completion of construction in conformance with the plans and documents.
2. The Consultant, based on review of Contractor provided as-builts and testing will prepare and submit the Notification of Completion of Construction for a Domestic Wastewater Collection/Transmission System to FDEP upon completion of construction.

SECTION 3 – ADDITIONAL SERVICES

During the Consultant's work on the project, it may become apparent to either the City or the Consultant that Additional Services not included in the basic Scope of Services are desired. The Consultant will undertake to provide such Additional Services upon the City's written authorization.

SECTION 4 - DELIVERABLES

The Consultant shall prepare and submit to the City, including electronic format when applicable, the following deliverables:

PHASE	ACTIVITY	DELIVERABLE
100	Project Management	• Monthly invoices and progress reports (PDF)

PHASE	ACTIVITY	DELIVERABLE
200	Bidding Services	• OPCC (PDF) • Updated Bid Documents (PDF) • Bid Addenda (PDF) • Conformed Documents (PDF)
300	Construction Services	• Shop Drawings (PDF) • Responses to RFIs (PDF) • Substantial Completion Walk Through input via email for City's Punch List (PDF) • FDEP Wastewater and ERP permit clearance and close out documents

SECTION 5 – COMPENSATION

The Consultant proposes to provide the professional consulting engineering services stipulated herein for the lump sum fee estimate shown in Table 1. The Consultant will provide monthly invoices based upon the percent complete for each task during the billing period. A detailed breakdown of the fee estimate is provided in **Attachment A**.

Table 1 – Fee Estimate

PHASE	DESCRIPTION	LUMP SUM FEE
100	Project Management	$ 23,200.00
200	Bidding Services	$ 17,950.00
300	Construction Services	$ 94,150.00
	TOTAL	$ 135,300.00

If it becomes apparent to Consultant at any time that changes in Scope or other issues impact total compensation, Consultant will so notify the City in writing. The City and Consultant will then promptly meet to review the status of the Project and any potential adjustments to Scope and/or compensation.

For authorized Additional Services, Consultant will bill City a fee based on Consultant's Standard Billing Rates, plus Reimbursable Expenses.

SECTION 6 - SCHEDULE

The Project will begin immediately after the Consultant receives a written Notice-to-Proceed (NTP) and an executed Work Authorization. The Consultant will coordinate with the City on the overall project schedule. Table 2 summarizes the anticipated duration of each phase from the date of the Notice to Proceed (NTP).

Table 2 – Estimated Schedule

PHASE	DESCRIPTION	DURATION
100	Project Management	21 months
200	Bidding Services	3 months
300	Construction Services	18 months
	TOTAL	**21 months**

CITY AND CONTRACTOR SERVICES:

The proposed Consultant services are based on the following services to be provided by the City or Contractor:

1. The Contractor will apply for a City of Titusville Building Permit and pay the associated application fees if applicable.
2. The City will administer bidding phase based on standard City Purchasing and Contracting documents and procedures, using construction drawings, specifications and technical material provided by the Consultant.
3. The City will verify contractor bid tabulations and references, determine compliance with the Contract Documents, and issue the notice of award.
4. During the construction phase of the project, the City will process administrative and financial paperwork of the Contract (pay requests, change order requests, etc.).
5. The City or Contractor will provide construction progress meeting agendas and minutes for distribution.
6. The City will perform daily construction inspections and witness routine tests as necessary.
7. The City will review and approve contractor pay applications.
8. The City will review and approve change order requests from the contractor.
9. The Contractor and/or the City is responsible for materials testing.
10. The Contractor will provide record drawings.

ASSUMPTIONS & EXCLUSIONS:

The following services are not included in this proposed scope of work:

1. Payment of permit fees.
2. Legal services are not included, including rendering opinions, resolving disputes, or legal recommendations.
3. SRF funding activities.
4. Full-time construction inspection or resident project representative (RPR) services.
5. Review of change orders.
6. Review of contractor pay applications.
7. Survey, geotechnical, or other field or material testing services during construction.
8. Review of field test reports.
9. Preparation of Operation and Maintenance (O&M) manuals.
10. Operator training.
11. Review of warranties for equipment supplied for the Project.
12. Preparation of signed and sealed record drawings.

AUTHORIZATION:

This Work Authorization (consisting of pages 1 to 7 and Attachment A) constitutes the entire Agreement between the City and the Consultant for this Project and supersedes all prior written or oral understandings. This Work Authorization may only be amended, supplemented, modified, or canceled by a duly executed written instrument.

This Work Authorization is to be effective as of the date a Purchase Order is issued for this Work Authorization.

CONSULTANT: Steven C. Hallowell

By: Steven C. Hallowell, PE

Title: Vice President

Date: 2-11-2026

ATTACHMENTS:

Attachment A – Fee Estimate

KNOX McRAE MASTER PUMP STATION (LS 90) IMPROVEMENTS BIDDING & CONSTRUCTION - FEE CALCULATION TABLE

Project Task Description	Principal	QA/QC Officer	Sr Project Manager	Lead Process Engineer (Civil)	Sr. Architect	Structural Engineer	Sr. Project Engineer (Electrical)	HVAC Engineer	Instrumentation Engineer	Project Engineer	Sr CAD Designer	Sr. Admin/ Clerical	Labor Subtotal		Direct Reimbursables	Subtotal Task
	Rate = $260	Rate = $260	Rate = $230	Rate = $220	Rate = $190	Rate = $230	Rate = $250	Rate = $175	Rate = $230	Rate = $160	Rate = $150	Rate = $100				
	Hours	Hours	Hours	Hours	Hours	Hours	Hours	Hours	Hours	Hours	Hours	Hours	Hours	Cost		
Phase 100 - Project Management																
101 - Project Management	4	0	72	0	0	0	0	0	0	24	0	16	116	$23,040	$160	$ 23,200.00
Subtotal Phase 100	*4*	*0*	*72*	*0*	*0*	*0*	*0*	*0*	*0*	*24*	*0*	*16*	*116*	*$23,040*	*$160*	*$ 23,200.00*
Phase 200 - Bidding Services																
201 - Pre-Bid Meeting	0	0	6	0	0	0	0	0	0	6	0	0	12	$2,340	$350	$ 2,690.00
202 - Review & Update Bid Docs	0	4	4	2	2	1	4	2	1	4	8	2	34	$6,630	$0	$ 6,630.00
203 - Bid Addenda	0	0	4	2	2	2	2	1	1	4	4	1	23	$4,445	$0	$ 4,445.00
204 - Conformed Documents	0	2	2	2	2	2	2	1	1	2	4	1	21	$4,185	$0	$ 4,185.00
Subtotal Phase 200	*0*	*6*	*16*	*6*	*6*	*5*	*8*	*4*	*3*	*16*	*16*	*4*	*90*	*$17,600*	*$350*	*$ 17,950.00*
Phase 300 - Construction Services																
301 - Construction Meetings (1 pre-con, 4 virtual)	0	0	10	0	0	0	0	0	0	8	0	0	18	$3,580	$350	$ 3,930.00
302 - Site Visits (14)	0	0	32	8	0	4	8	0	8	40	0	0	100	$20,280	$2,470	$ 22,750.00
303 - Submittals	0	0	12	24	8	16	32	8	24	40	0	16	180	$36,160	$0	$ 36,160.00
304 - RFIs (5)	0	2	4	2	2	2	4	2	4	8	2	2	34	$6,770	$0	$ 6,770.00
305 - Start Up and Testing	0	0	8	0	0	0	8	0	8	8	0	0	32	$6,960	$800	$ 7,760.00
306 - Substantial Completion	0	0	8	0	0	0	8	0	8	6	0	0	30	$6,640	$800	$ 7,440.00
307 - Final Completion	0	0	8	0	0	0	8	0	8	6	0	0	30	$6,640	$800	$ 7,440.00
308 - Project Closeout	0	0	2	2	0	0	1	0	1	2	0	2	10	$1,900	$0	$ 1,900.00
Subtotal Phase 300	*0*	*2*	*84*	*36*	*10*	*22*	*69*	*10*	*61*	*118*	*2*	*20*	*434*	*$88,930*	*$5,220*	*$ 94,150.00*
PROJECT TOTAL	**4**	**8**	**172**	**42**	**16**	**27**	**77**	**14**	**64**	**158**	**18**	**40**	**640**	**$129,570**	**$5,730.00**	**$ 135,300.00**

TASK ORDER FOR PROFESSIONAL ENGINEERING CONTINUING CONSULTING SERVICES AGREEMENT

City of Titusville
Purchasing & Contracting Division

Post Office Box 2806
(555 South Washington Avenue)
Titusville, FL 32781-2806
(32796-3584)

CONTRACT#:	CO23Q006 TB	**TASK ORDER#:**	WPTO004
CONSULTANT:	Wright-Pierce, Inc.	**PROJECT#:**	WR2603
ADDRESS:	601 S. Lake Destiny Rd. Maitland, FL 32751	**PROJECT NAME:**	Knox McRae Master Pump Station Project for Bidding and Construction Services

By the signature affixed below, both the City and the Consultant agree to the following Contract work as per the Task Order stipulated herein. Upon proper execution of this document, the Consultant is hereby notified to commence work. All Task stated below is hereby incorporated and made a part of the Contract identified above. And all the terms and conditions of said Contract are incorporated herein and in full force and effect while executing the Task stipulated as follows:

Provide engineering consulting servuces to provide limited bidding services which include answering technical questions during the bid process and limited construction services during construction which include shop drawing reviews, inspections as required as the design engineer, and closing of the FDEP permit associated with the project as the engineer of record in accordance with proposal dated February 11, 2026.

A)	TOTAL AMOUNT OF TASK AWARDED PRIOR TO THIS TASK ORDER	$ 814,120.00
	TOTAL AMOUNT FOR THIS TASK ORDER	$ 135,300.00
	TOTAL AMOUNT OF TASK AWARDED INCLUDING THIS TASK ORDER	$ 949,420.00
B)	TERM FOR THIS TASK ORDER	
	COMPLETION DATE FOR THIS TASK ORDER: _____ MM/DD/YYY or 21 months #of Days from NTP	

CONSULTANT *(Print)*:

Firm Name: _____

Authorized Staff Name _____

_____ _____
(Signature) **Date**

CITY OF TITUSVILLE:

_____
Mayor *(Print)*

_____ _____
(Signature) **Date**

ATTEST: _____ _____
City Clerk **Date**

Approved as to Form

Approved as to Content

_____ _____
(Signature) **Date**

_____
City Manager *(Print)*

City of Titusville - Staff Reviews

_____ _____ _____
Purchasing & Contracting Administrator *(Print)* **(Signature)** **Date**

_____ _____ _____
Department Director Name/Department *(Print)* **(Signature)** **Date**

City of Titusville

"Gateway to Nature and Space"

REPORT

To: Members of the City Council

From: Thomas Abbate, City Manager

Subject: **First Amendment to Tender and Release Agreement**

Department/Office: Public Works

Recommended Action:
Approve the first amendment to the tender and release agreement for the Indian River force main project and allow the Mayor to execute the amendment.

Summary Explanation & Background:
Young's Communication was previously the hired contractor to complete the Indian River Force Main project. The contractor went out of business at the end of the project. As a result, the surety associated with the project guarantees the work to be completed. The City worked with the Surety and determined it was in the best interest of all parties that the Surety release their need to obtain a contractor but cover the expenses while the City proceeded with hiring a contractor to finish the minimal left to finish on the project, which is now complete.

As a result, the tender and release agreement was reviewed and approved by Council on October 28, 2025. The original agreement included payment to the surety with a deadline of December 31, 2025. This was delayed due to final review from all parties. Therefore, the agreement must be amended to include a new date for payment to the surety. There are no other proposed changes to the agreement.

Alternatives:
Do not approve the amendment.

Item Budgeted:
NA

Source/Use of Funds/Budget Book Page:
NA

Strategic Plan:
Goal No 2

Strategic Plan Impact:

This supports goal number 2 by completing all neccessary steps to close out the Indian River force main project.

ATTACHMENTS:

1. First Amendment to Tender and Release- Final

FIRST AMENDMENT TO TENDER AND RELEASE AGREEMENT

THIS FIRST AMENDMENT TO TENDER AND RELEASE AGREEMENT ("Amendment") is made this _____ day of March 2026, between Atlantic Specialty Insurance Company ("ASIC" or "Surety"), and the City of Titusville ("Owner"), and amends that certain Tender and Release Agreement dated October 28, 2025 (the "Agreement"). (ASIC and the Owner are sometimes collectively referred to in this Amendment as the "Parties").

1. **Amendment to Paragraph 5 "Payment to the Surety"**. Paragraph 5 of the Agreement is amended solely to replace the deadline of "December 31, 2025" with "March 31, 2026." All other terms of Paragraph 5 remain unchanged.

2. **No Other Amendments**. Except as expressly amended herein, all terms and conditions of the Agreement remain unchanged an in full force and effect.

3. **Ratification**. The Agreement, as amended by this Amendment, is hereby ratified and confirmed in all respects.

4. **Counterparts**. This Amendment may be executed in counterparts and by electronic signatures, each of which shall be deemed an original.

THE SIGNATORIES ACKNOWLEDGE THAT THEY HAVE READ THE FOREGOING AGREEMENT, FULLY UNDERSTAND ITS TERMS AND CONDITIONS, AND AGREE TO BE BOUND BY ALL OF ITS TERMS AND CONDITIONS.

ATLANTIC SPECIALTY INSURANCE COMPANY	**CITY OF TITUSVILLE**
By:_____	By:_____
Printed Name:_____	Printed Name:_____
Its:_____	Its:_____
Date:_____	Date:_____

CITY OF TITUSVILLE

STATE OF FLORIDA
COUNTY OF BREVARD /

The foregoing instrument was acknowledged before me by means of ☐ **physical presence** or ☐ **online notarization**, this ___ day of _____***, 2026***, by _____ (name of person acknowledging), who is personally known to me ☐ or who has produced _____(type of identification) as identification.

Notary Public, State of Florida

(Print Name) _____

My Commission No.: _____

My Commission Expires: _____

ATLANTIC SPECIALTY INSURANCE COMPANY

STATE OF _____
COUNTY OF _____ /

The foregoing instrument was acknowledged before me by means of ☐ **physical presence** or ☐ **online notarization**, this ___ day of _____***, 2026***, by _____ (name of person acknowledging), who is personally known to me ☐ or who has produced _____(type of identification) as identification.

Notary Public, State of _____

(Print Name) _____

My Commission No.: _____

My Commission Expires: _____

City of Titusville

"Gateway to Nature and Space"

REPORT

To: Members of the City Council

From: Thomas Abbate, City Manager

Subject: **Conditional Use Permit (CUP) Application No. 9-2024 Titusville Storage**

Department/Office: Planning

Recommended Action:

Consider Conditional Use Permit Application No. 9-2024 to allow a mini-warehouse use at property identified by Brevard County Parcel ID No. 22-35-26-00-504.1, located west of US Highway 1 and south of State Road 50, currently designated with the M-1 zoning district.

On March 4, 2026, the Planning and Zoning Commission recommended approval as presented, 5-1. One member voted no because he thought there are too many storage facilities in Titusville and the City should stop and evaluate what is being allowed in the City.

Summary Explanation & Background:

The applicant is requesting a Conditional Use Permit (CUP) to allow a mini-warehouse use at a vacant 2.55± acre property located west of S. Washington Avenue (U.S. Highway 1) and south of State Road 50, having Brevard County Parcel I.D. No. 22-35-26-00-504.1, currently designated with the Light Industrial Services and Warehousing (M-1) zoning district. A CUP is required to permit a mini-warehouse use in the M-1 zoning district according to Section 28-214. – Mini-warehouse.

The conceptual site plan illustrates a 4-story mini-warehouse building, associated parking, stormwater facilities, and wetland preservation area. The property is currently vacant and has been designated as “Industrial” on the City’s future land use map as early as 1988. The current M-1 zoning district was placed on the property with the adoption of the citywide rezoning Ordinance No. 5-1993. The property is vacant. The property has 438 feet of frontage along U.S. Highway 1, an arterial road, and abuts the Florida East Coast Railroad along the rear.

Alternatives:

1. Approve the CUP as presented.
2. Approve the CUP with modified conditions.
3. Do not approve the CUP.

Item Budgeted:
N/A

Source/Use of Funds/Budget Book Page:
N/A

Strategic Plan:
Goal 1: Quality of Life
Goal 2: Efficient & Effective Services
Goal 4: Economic Development
Goal 6: Community Design

Strategic Plan Impact:

ATTACHMENTS:
1. Staff Report CUP #9-2024 2-26-26
2. Application
3. Concept Plan CUP #9-2024
4. Survey Plans
5. MAPS
6. Legal Ad

City of Titusville

Planning Department Staff Report

Conditional Use Permit

CUP No. 9-2024 – Titusville Storage

Meeting Dates: *Planning and Zoning Commission:* *March 4, 2026*
City Council Public Hearing: *March 10, 2026*

Prepared By: Eddy Galindo, AICP, Principal Planner

Applicant(s): Paul Goldenberg, of GFG Private Funds LLC., with permission from the owner, Randall Real Estate Investments, Inc.

Applicant's Request: Approval of a Conditional Use Permit to allow a mini-warehouse use at property identified by Brevard County Parcel ID No. 22-35-26-00-504.1, located west of US Highway 1 and South of State Road 50, currently designated with the M-1 zoning district.

Staff Recommendation: Consider CUP No. 9-2024

BACKGROUND INFORMATION

The applicant is requesting a Conditional Use Permit (CUP) to allow a mini-warehouse use at a vacant 2.55± acre property located west of S. Washington Avenue (U.S. Highway 1) and south of State Road 50, having Brevard County Parcel I.D. No. 22-35-26-00-504.1, currently designated with the Light Industrial Services and Warehousing (M-1) zoning district. A CUP is required to permit a mini-warehouse use in the M-1 zoning district according to Section 28-214. – Mini-warehouse.

The conceptual site plan illustrates a 4-story mini-warehouse building, associated parking, stormwater facilities, and wetland preservation area. The property is currently vacant and has been designated as "Industrial" on the City's future land use map as early as 1988. The current M-1 zoning district was placed on the property with the adoption of the citywide rezoning Ordinance No. 5-1993. The property is vacant. The property has 438 feet of frontage along U.S. Highway 1, an arterial road, and abuts the Florida East Coast Railroad along the rear.

PROPERTY INFORMATION

Existing Use, Future Land Use, and Zoning

Existing Use	Future Land Use	Zoning
Vacant	Industrial	Light Industrial Services and Warehousing (M-1)

SURROUNDING PROPERTY INFORMATION

Existing Use, Future Land Use, and Zoning

Location	Use	Future Land Use	Zoning
North	Brewery/Restaurant	Industrial	Industrial (M-2)
South	Auto Dealership	Commercial High Intensity	Community Commercial (CC)
East	U.S. Highway 1 Right of Way	N/A	N/A
	Office	Planned Industrial Park	Planned Industrial Development (PID)
	Warehousing	Planned Industrial Park	Planned Industrial Development (PID)
	Multifamily Residential	Medium Density Residential	Planned Development (PD)
West	Florida East Coast Railroad	N/A	N/A
	Preservation Area	Conservation	Open Space and Recreation (OR)

STAFF ANALYSIS

Conditional Use Criteria

Section 34-76 of the LDRs states that before any Conditional Use is granted, City Council shall apply the standards set forth below and shall determine that satisfactory provisions and arrangements of the following factors have been met by the petitioner, where applicable. The following are staff's findings based on the CUP request.

Compliance with all elements of the Comprehensive Plan.

1) Ingress and egress to the property and proposed structure with particular reference to automotive and pedestrian safety and convenience, traffic flow and control, and access in case of fire or catastrophe.

   Staff comment: The property is currently vacant, undeveloped. The concept plan proposes one motor vehicle ingress and egress to the site by a driveway connection to S. Washington Avenue (U.S. Highway 1).

   A sidewalk is proposed along the entire length of the frontage along S. Washington Avenue as required in Section. 30-238. - Road and sidewalk requirements.

   The Fire Department did not express any concerns or objections to the request.

2) Nuisance factors detrimental to adjacent and nearby properties and the City as a whole. Nuisance factors shall include but not necessarily be limited to noise, odor, smoke, glare, electrical interference and/or mechanical vibrations.

Staff comment: The location of the proposed mini-warehouse use is adjacent to an existing industrial brewery/restaurant to the north and an existing auto dealership to the south. Nuisances such as heat, glare, smoke, and fumes are not typical for a mini-warehouse use; therefore, the proposed development is compatible with the surrounding properties.

3) Adopted level of service for solid waste disposal, potable water, or wastewater shall not be exceeded.

Staff comment: According to the City's preliminary concurrency assessment the proposed development is anticipated to generate a potable water demand of 0.0006 million gallons per day (MGD) and a wastewater demand of 0.0005 MGD. The demand is not anticipated to generate a significant impact to the City's potable water or wastewater utilities. The Public Works Department did not express any concerns or objections to the request related to solid waste.

4) Screening and buffering with reference to type, dimensions and character.

Staff comment: The required landscape yard types are outlined in Section. 30-332. – Required landscape yards. Subsection (a), Table 30-8: A Type D, 30-foot landscape yard (buffer) is required where the subject property fronts S. Washington Avenue (U.S. 1) along the east property boundary. The concept plan meets this requirement.

A Type A, 10-foot landscape buffer is required where the property abuts the existing industrial brewery/restaurant use to the north and a Type A, 10-foot landscape buffer is required where the property abuts the existing commercial auto dealership use to the south. The concept plan meets this requirement.

A Type B, 20-foot landscape buffer is required where the property abuts the Florida East Coast Railroad right of way along the west property boundary. The concept plan meets this requirement.

A landscape plan will be submitted with the site plan to confirm compliance with the minimum plant materials required in Section 30-335. – Description of landscape yards Subsection (a) Table 30-9 Landscape Yard Standards

5) Signs and proposed exterior lighting with reference to glare, traffic safety, economic effect and compatibility and harmony with properties in the district.

Staff comment: No unique signage or exterior lighting nuisances are anticipated to be generated as a result of the mini-warehouse use. Signage is permitted separately and shall be reviewed for consistency with the Land Development Regulations when an application is submitted. All site lighting will require approval through the site plan process.

6) Hours of operation shall be consistent with surrounding properties.

Staff comment: The applicant states the facility will operate between the hours of 6:00am to 10:00pm, seven days a week. For comparison, the auto dealership to the south operates from 8:30am to 7:00pm Monday through Saturday, and remains closed on Sunday, according to their webpage. In addition, the brewery/restaurant to the north opens are early as 10:00am and closes as late as 9:00pm and remains closed on Monday. The proposed hours of operations are generally consistent with the surrounding properties.

7) Off street parking and loading area where required with particular attention to ingress and egress.

Staff comment: One of the standards of the mini-warehouse use in the M-1 zoning district is to provide parking at a ratio of one (1) parking space for every twenty-five (25) storage cubicles and two (2) parking spaces for the manager's quarters, as described in Section 28-214(d)(1)g of the Land Development Regulations. The concept plan indicates that forty-one (41) total parking spaces are required; however, only eighteen (18) spaces are provided, which does not illustrate compliance with the parking standard. The applicant has provided a parking analysis supporting the reduced requirement and a variance was approved by the Board of Adjustments and Appeals to allow as low as fourteen (14) parking spaces, including one ADA-accessible space.

8) Required yards and other open spaces.

Staff comment: The required landscape yard types are outlined in Section. 30-332. – Required landscape yards. Subsection (a), Table 30-8: A Type D, 30-foot landscape yard (buffer) is required where the subject property fronts S. Washington Avenue (U.S. 1) along the east property boundary. The concept plan meets this requirement.

A Type A, 10-foot landscape buffer is required where the property abuts the existing industrial brewery/restaurant use to the north and a Type A, 10-foot landscape buffer is required where the property abuts the existing commercial auto dealership use to the south. The concept plan meets this requirement.

A Type B, 20-foot landscape buffer is required where the property abuts the Florida East Coast Railroad right of way along the west property boundary. The concept plan meets this requirement.

A landscape plan will be submitted with the site plan to confirm compliance with the minimum plant materials required in Section 30-335. – Description of landscape yards Subsection (a) Table 30-9 Landscape Yard Standards

9) General compatibility with adjacent properties and other property in the district AND
10) Whether the proposed change is out of scale with the needs of the neighborhood or the City.

Staff comment: The mini-warehouse use is compatible to the existing industrial brewery/restaurant use to the north and the commercial auto dealership to the south. The property is bounded by the Florida East Coast Railroad to the west and the U.S.1 arterial right-of-way to the east.

The mini-warehouse building is proposed to be four stories high, which is larger in scale than most of the surrounding development. Most of the surrounding buildings are only one story high; however, four stories is permitted, given that the maximum building height in the M-1 zoning district is 50-feet.

Nuisances such as heat, glare, smoke, and fumes are not typical for a mini-warehouse use; therefore, the proposed development is compatible with the surrounding properties.

11) Special requirements set out in the schedule of district regulations for the particular use involved.

Staff comment: Section 28-214(d) of the Zoning Code requires a mini-warehouse to meet the following use standards.

a. Shall have a minimum property size of two (2) acres.

Staff comment: The subject property is 2.55 acres in size and exceeds the minimum property size.

b. Shall allow City Council the ability to require accommodations for a live-in manager for a mini-warehouse facility.

Staff comment: City Council could consider requiring a live-in manager as a condition of approval. The staff does not currently recommend requiring such as a condition of approval.

c. Shall keep all storage on the property within enclosed or otherwise secured storage cubicles.

Staff comment: The mini-warehouse use is proposed to have all storage within an enclosed building.

d. Shall require the operator of the mini-warehouse facility to provide locks for all units and maintain a master key to all locks.

Staff comment: The operator will maintain locks for all units.

e. Shall be limited to dead storage use for the general public and no activities such as miscellaneous or garage sales shall be conducted on the premises. The servicing or repair of motor vehicles, boats, trailers, lawn mowers and other similar equipment shall not be conducted on the premises.

Staff comment: No garage sales or servicing of equipment is permitted on site.

f. Shall not allow unit size to exceed five hundred (500) square feet.

Staff comment: The applicant provided a unit count matrix on sheet A201of their site plan submittal which demonstrates the largest unit will be 260 square feet. The project meets this standard.

g. Shall provide parking at a rate of one (1) space for each twenty-five (25) storage cubicles and two (2) spaces for the manager's quarters.

Staff comment: *The concept plan indicates a total of 971 storage cubicles are proposed which requires forty-one (41) total parking spaces. Only eighteen (18) parking spaces are provided, which does not illustrate compliance with the parking standard. The applicant has provided a parking analysis supporting the reduced requirement and a variance was approved by the Board of Adjustments and Appeals to allow as low as fourteen (14) parking spaces, including one ADA-accessible space.*

h. Shall require a minimum of thirty-five (35) feet provided between warehouse buildings for driveway, parking and fire line [lane] purposes.

Staff comment: The concept plan demonstrates one building on the site. No other buildings are proposed.

i. Shall require buffers be installed around the perimeter of the project in accordance with Chapter 30, Article III, Division 10 of these regulations.

Staff comment: The required landscape yard types are outlined in Section. 30-332. – Required landscape yards. Subsection (a), Table 30-8: A Type D, 30-foot landscape yard (buffer) is required where the subject property fronts S. Washington Avenue (U.S. 1) along the east property boundary. The concept plan meets this requirement.

A Type A, 10-foot landscape buffer is required where the property abuts the existing industrial brewery/restaurant use to the north and a Type A, 10-foot landscape buffer is required where the property abuts the existing commercial auto dealership use to the south. The concept plan meets this requirement.

A Type B, 20-foot landscape buffer is required where the property abuts the Florida East Coast Railroad right of way along the west property boundary. The concept plan meets this requirement.

A landscape plan will be submitted with the site plan to confirm compliance with the minimum plant materials required in Section 30-335. – Description of landscape yards Subsection (a) Table 30-9 Landscape Yard Standards

FINDINGS:

Support	Do Not Support
• The mini-warehouse use is listed as permitted with a conditional use permit in the M-1 zoning district. The use is not expected to generate excessive nuisances • The proposed use is non-residential and the property has direct access onto an arterial road • The concept plan proposes to preserve an existing 5,123 square foot wetland area and provide at least 15-foot-wide wetland buffers along its perimeter • The concept plan does not meet the required parking ratio; however, a parking analysis supporting reduced parking was provided and a variance was approved by the Board of Adjustments and Appeals to allow as low as fourteen (14) parking spaces, including one ADA-accessible space.	

RECOMMENDATION:

Consider the conditional use permit request to allow a mini-warehouse use.

Gateway to Nature & Space

APPLICATION FOR CONDITIONAL USE PERMIT

Please submit electronically a completed application including required submittals to the Planning Department for payment and meeting scheduling. Chapter 34 of the Titusville Land Development Regulations contains the instructions for filing and the required exhibits. INCOMPLETE APPLICATIONS SHALL NOT BE ACCEPTED.

1. Project Information	Project Name TITUSVILLE STORAGE	Property Address/Location Description S. WASHINGTON AVE, VACANT
2. Applicant/ Owner	Name of Applicant/Contact PAUL GOLDENBERG	Name of Owner JEFFREY CONDELLA
	Street Address 10 E 39TH STREET	Street Address 3307 CLARCONA ROAD
	City State Zip NEW YORK NY 10016	City State Zip APOPKA NY 32703
	Telephone # 321-217-6247 Fax # N/A	Telephone # 321-217-6247 Fax # N/A
	E-Mail Address CCOLLINS@URBNDESIGNGROUP.COM	E-Mail Address CCOLLINS@URBNDESIGNGROUP.COM
3. Applicant Status	☐ Owner ☐ Tenant ☑ Agent ☐ Other	
4. Parcel ID	22-35-26-00-504.1	**Tax Acct.** 2213430
5. Site Size (Attach Legal Description)	Acres: 2.55	Square Feet:
6. Current Land Uses	Identify the land uses located on-site and adjacent to the subject site (identify "all" uses that touch property on each boundary), such as grocery store, citrus farm, office, single family residential, etc.: **SUBJECT SITE:** **NORTH:** Playlinda Brewing Company **SOUTH:** Vacant Lot **EAST:** S. Washington Ave. **WEST:** Railroad Track	
7. Current Designation	Future Land Use: INDUSTRIAL	Zoning: M-1

8. Building Status	Existing Building(s) on the site? VACANT LOT		New Buildings Proposed? SELF-STORAGE	
9. Operating Schedule	(Hours of operation, size of operation) Maximum 6:00am to 10:00pm, 7 Days a Week.			
10. Note any previous CUPs on the site	N/A			
11. Check other applications submitted	Conditional Use ☑	Vacation of Easement ☐	Master Plan Approval ☐	Rezoning ☐
	Vacation of Right of Way ☐	Site Plan ☑	Subdivision/ Plat ☐	Other:
12. Narrative	Please provide a brief description of your request and the proposed project: (Attach separate narrative page if necessary) Randall Real Estate Investments, Inc. owns the 2.55 acres parcel and Paul Goldenberg is our client, the applicant, and the contract purchaser of the property. The proposed project is a 4-story, 120, 820 sf self-storage facility on a currently vacant lot. In connection with the proposed project, a site plan application has been submitted. The property is zoned M-1 Light Industrial Services and Warehousing.			

- **All applications shall require Community Development Staff review prior to submittal.**
- All applications shall be submitted to the Planning Department electronically and officially logged in by **end of business day**.
- Tentative hearing dates are scheduled approximately 4 months from the time a completed application is submitted.
- Incomplete applications will not be accepted and will not be considered to be officially submitted until the appropriate information and fees are submitted. Meeting dates for incomplete applications will not be set until all required information and fees are submitted.
- Petitions requiring review from other boards or commissions prior to being forwarded to the Planning and Zoning Commission and City Council are not guaranteed placement on the originally scheduled date(s).
- All meeting agendas will be posted on the City's web site and staff reports for the request can be obtained by contacting the Planning Department at 321-567-3782.

ACKNOWLEDGEMENT

1. I am the owner and/or legal representative of the owner of the property described, which is the subject of this application.
2. All answers to the questions in said application and all surveys and/or site plans and data attached to and made a part of this application are honest and true to the best of my knowledge and belief. By my signature below, I acknowledge that I have complied with all submittal requirements and that this request package is complete. I further understand that an incomplete application submittal may cause my application to be deferred.
3. Should this application be granted, I understand that any condition(s) imposed upon the granting of this request shall be binding to the owner, his heirs, and successors in title to possession of the subject property.
4. I understand that I must attend all applicable meetings and have been informed of the meeting date(s) and time(s). I understand that if I fail to appear at an applicable meeting, the appropriate Board or Commission may either table or deny the request.
5. I understand that my request if approved does not encumber provision of utility, road or other City infrastructure capacity. The analysis provided by staff of existing levels of service for public facilities and services in the vicinity of the parcel identified in this application is a non-binding analysis, and does not guarantee capacity will be available in the future or encumber/reserve capacity for any period of time.

This matter is subject to quasi-judicial rules of procedure. Interested parties should limit contact with the City Council, Board of Adjustment & Appeals, and Planning & Zoning Commission on this topic to properly noticed public hearings or to written communication to the City Clerk's Office, City of Titusville, P.O. Box 2806, Titusville, FL 32781

/s/ Paul Goldenberg _____ 6/17/2024

(Signature*) (Date)

* *By entering your name in the "Signature" box above, you are signing this Application electronically. You agree your electronic signature is the legal equivalent of your manual signature on this Application. By entering your name in the "Signature" box above, you consent to be legally bound by this Application's terms and conditions.*

Date received:_____

Accepted by:_____

Gateway to Nature & Space

SUBMITTAL CHECKLIST

(Development Review Procedures Manual Section 7)

Please fill out the following and submit the documents to the Planning Department electronically. Payment of fees does not ensure a favorable decision. Additional information may include documents initially waived at the pre-application meeting but subsequently determined necessary by staff.

1.	Complete Application and Fees	☑
2.	Warranty Deed	☑
3.	Notarized Owner Authorization Form (If applicable)	☑
4.	Legal Description (from a certified survey in Microsoft Word format)	☑
5.	Certified Survey (sealed and containing permanent reference points as described by Chapter 177, Florida Statutes, with bearings, distances and closures)	☑
6.	Conceptual Site Plan (minimum 24" x 36") in hardcopy or electronic in PDF format.	☑
7.	Names, addresses and address labels for all property owners within 500 feet of the subject property. *Note: This listing is available from either the Brevard County Property Appraiser's Office or the City of Titusville Planning Department. Current charge for this service is $35.00.*	☑
8.	Pre-Application Meeting Date: CONDUCTED 4/9/24 AT 2PM. Staff in Attendance:	☑

THE CONCEPTUAL PLAN SHALL INCLUDE THE FOLLOWING:
(Development Review Procedures Manual Section 7)

1.	All property lines and easements	☑
2.	The general location and size of all existing and proposed structures and parking areas.	☑
3.	All required landscaping, buffering, or screening.	☑
4.	General location of ingress and egress to the property	☑

SITE DATA

1. **PARCEL ID NUMBER:** 22-35-26-00-504.1
2. **EXISTING SITE AREA/PROPERTY AREA:** 2.52AC (109,648 SF)
3. **LAND USE:**
   EXISTING: VACANT INDUSTRIAL LAND
   PROPOSED: MINI-WAREHOUSE
4. **ZONING:**
   EXISTING/PROPOSED: M-1 LIGHT INDUSTRIAL SERVICES AND WAREHOUSING
5. **BUILDING HEIGHT:**
   MAXIMUM ALLOWED: 50'
6. **PROPOSED: SELF STORAGE**
7. **BUILDING SETBACKS:**

	MINIMUM	PROP. BLDG. SETBACK
• FRONT (SOUTH WASHINGTON AVENUE)	25'	55'
• SIDE (NORTH)	10'	37.23' MIN.
• SIDE (SOUTH)	10'	139.63' MIN.
• REAR (WEST)	20'	45'

7. **LANDSCAPE SETBACKS:**

	MINIMUM	PROP. YARD SETBACK
• FRONT (SOUTH WASHINGTON AVENUE)	25'	30'
• SIDE (NORTH)	10'	10'
• SIDE (SOUTH)	10'	66.5'
• REAR (WEST)	20'	20'

8. **LOT COVERAGE:**
   MAXIMUM LOT COVERAGE 70% OF SITE: (0.70 * 109,648 SF) = 76,754 SF
   PROPOSED LOT COVERAGE 26% OF SITE: (28,910 SF)
9. **PARKING REQUIREMENTS:**

	CRITERIA:	REQUIRED:
SELF STORAGE: 971 UNITS	1 PER 25 UNITS	39
	MANAGER'S OFFICE	2 SPACES

TOTAL SPACES REQUIRED: 41 SPACES
TOTAL SPACES PROVIDED: 18 SPACES ** (including 1 ADA Space)

**** PLEASE REFER TO PARKING ANALYSIS SUPPORTING REDUCED REQUIREMENTS.**

10. **OPEN SPACE**
    PROPOSED OPEN SPACE: 51,173 SF (1.17 AC) 47%

LEGAL DESCRIPTION:

THE LAND IS DESCRIBED AS FOLLOWS:

ALL OF GOVERNMENT LOT 3, SECTION 26, TOWNSHIP 22 SOUTH, RANGE 35 EAST, LYING WEST OF U.S.A. HIGHWAY NO. 1 AS RELOCATED; LESS AND EXCEPT THE RIGHT-OF-WAY OF THE FLORIDA EAST COAST RAILROAD, SAID RIGHT OF WAY BEING DESCRIBED AS PARCEL "4" IN DEED FROM S. JAMES COHEN, AS TRUSTEE, TO MONNI WEISBERGER, AS TRUSTEE, AS RECORDED IN OFFICIAL RECORDS BOOK 735, PAGE 80, PUBLIC RECORDS OF BREVARD COUNTY, FLORIDA, AND ALSO LESS AND EXCEPT LAND AS DESCRIBED IN DEED FROM MONNI WEISBERGER, INDIVIDUALLY AND AS TRUSTEE, AND SHIRLEY WEISBERGER, HIS WIFE, TO AIR RANCH REALTY, INC., AS RECORDED IN OFFICIAL RECORDS BOOK 1084, PAGE 141, PUBLIC RECORDS OF BREVARD COUNTY, FLORIDA, AND ALSO LESS AND EXCEPT THE FOLLOWING:

COMMENCE ON THE SOUTH LINE OF SECTION 26, TOWNSHIP 22 SOUTH, RANGE 35 EAST, BREVARD COUNTY, AT ITS INTERSECTION WITH THE WESTERLY RIGHT OF WAY LINE OF RELOCATED U.S. HIGHWAY NO. 1; THENCE RUN NORTH 15°51'12" WEST, 788.35 FEET ALONG THE WESTERLY RIGHT OF WAY OF U.S. HIGHWAY NO.1; THENCE NORTH 89°25'12" WEST,260.65 FEET; THENCE SOUTH 15°51'12" EAST, 788.35 FEET ALONG THE EASTERLY RIGHT OF WAY LINE OF RELOCATED F.E.C. RAILWAY; THENCE SOUTH 89°25'12" EAST, 260.65 FEET ALONG THE SOUTH LINE OF SAID SECTION 26, TO THE POINT OF BEGINNING.

ALSO LESS AND EXCEPT:

A PORTION OF LANDS DESCRIBED IN O.R. BOOK 3183, PAGES 706-707, OF THE PUBLIC RECORDS OF BREVARD COUNTY, FLORIDA, LYING IN SECTIONS 26 AND 27, TOWNSHIP 22 SOUTH, RANGE 35 EAST, OF SAID BREVARD COUNTY, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE SOUTHEAST CORNER OF SAID SECTION 27, SAID POINT BEING THE POINT-OF BEGINNING; THENCE NORTH 89°39'09" WEST ALONG THE SOUTH LINE OF SAID SECTION 27, A DISTANCE OF 927.58 FEET TO THE EAST LINE OF LANDS DESCRIBED IN O.R. BOOK 1328, PAGE 286, OF THE SAID PUBLIC RECORDS OF BREVARD COUNTY; THENCE NORTH 00°20'51" EAST ALONG SAID EAST LINE, A DISTANCE OF 660.00 FEET TO THE NORTH LINE OF LANDS DESCRIBED IN O.R. BOOK 1328, PAGE 328; THENCE NORTH 89°39'09" WEST ALONG THE NORTH LINE OF LANDS DESCRIBED IN O.R. BOOK 1328, PAGE 286 AND THE NORTH LINE OF LANDS DESCRIBED IN DEED BOOK 69, PAGE 216, DEED BOOK 79, PAGE 68 AND O.R. BOOK 1033, PAGE 280, OF THE SAID PUBLIC RECORDS OF BREVARD COUNTY, A DISTANCE OF 1,262.74 FEET TO THE WEST LINE OF LANDS DESCRIBED IN O.R. BOOK 1033, PAGE 280; THENCE SOUTH 00°20'51" WEST ALONG SAID WEST LINE, A DISTANCE OF 635.00 FEET TO THE NORTH RIGHT-OF-WAY LINE OF LITTLE LEAGUE LANE; THENCE NORTH 89°39'09" WEST ALONG SAID NORTH RIGHT-OF-WAY LINE, A DISTANCE OF 440.00 FEET TO THE EAST RIGHT-OF-WAY LINE OF SISSON ROAD; THENCE NORTH 00°01'14" EAST ALONG SAID EAST RIGHT-OF-WAY LINE, A DISTANCE OF 1,296.16 FEET TO THE SOUTH RIGHT-OF-WAY LINE OF A 10 FOOT ROAD RIGHT-OF-WAY PER TITUSVILLE FRUIT AND FARMS LANDS CO., ACCORDING TO THE PLAT THEREOF, AS RECORDED IN PLAT BOOK 2, PAGE 29, OF THE SAID PUBLIC RECORDS OF BREVARD COUNTY; THENCE SOUTH 89°39'10" EAST ALONG THE SAID SOUTH RIGHT OF-WAY LINE, A DISTANCE OF 2,622.17 FEET TO A POINT ON THE EAST LINE OF SAID SECTION 27; THENCE SOUTH 89°30'31" EAST LEAVING SAID EAST LINE, A DISTANCE OF 325.12 FEET TO THE WEST RIGHT-OF WAY LINE OF FLORIDA EAST COAST RAIL ROAD; THENCE SOUTH 15°57'05" EAST ALONG THE SAID WEST RIGHT-OF-WAY LINE, A DISTANCE OF 1,377.01 FEET TO THE SOUTH LINE OF SAID SECTION 26; THENCE NORTH 89°32'34" WEST ALONG SAID SOUTH LINE, A DISTANCE OF 695.10 FEET TO THE POINT-OF BEGINNING.

Sunshine811

Call 811 or visit sunshine811.com two full business days before digging to have buried facilities located and marked.

Check positive response codes before you dig!

KEYNOTE LEGEND

1. PROP. 24" STOP BAR
2. PROP. 2-6" DOUBLE YELLOW STRIPING
3. PROP. PAVEMENT MARKING (TYP.)
4. PROP. WHITE DIRECTIONAL TRAFFIC ARROWS
5. PROP. SINGLE 4" YELLOW SOLID LINE
6. PROP. PEDESTRIAN CROSSWALK STRIPING
7. PROP. 4" THICK CONCRETE SIDEWALK
8. PROP. 5' ACCESSIBLE PARKING STRIPING
9. PROP. WHEEL STOP (TYP.)
10. PROP. TYPE "D" CURB
11. PROP. ENTRANCE / EXIT DOOR (REF. TO ARCH. PLANS) TBD
12. PROP. LANDSCAPE (REF. TO LANDSCAPE PLANS)
13. PROP. DRIVEWAY PER LATEST FDOT STANDARDS INDEX 522-003
14. EXIST. POWER POLE TO REMAIN AND TO BE PROTECTED DURING CONSTRUCTION
15. PROP. BICYCLE RACK (REF. TO ARCH. PLANS)
16. PROP. TYPE K-4 BOLLARDS (TOTAL 6)
17. PROP. SLIDING GATE. GATE OPEN FROM LANDSCAPE AREA (UNDER SEPARATE PERMIT) (REF. TO ARCH. PLANS)
18. PROP. 6' HIGH OPAQUE CHAIN LINK FENCE (UNDER SEPARATE PERMIT) (REF. TO ARCH. PLANS)
19. PROP. 6' HIGH ORNAMENTAL FENCE (UNDER SEPARATE PERMIT) (REF. TO ARCH. PLANS)
20. PROP. 4' PAVED SHOULDER

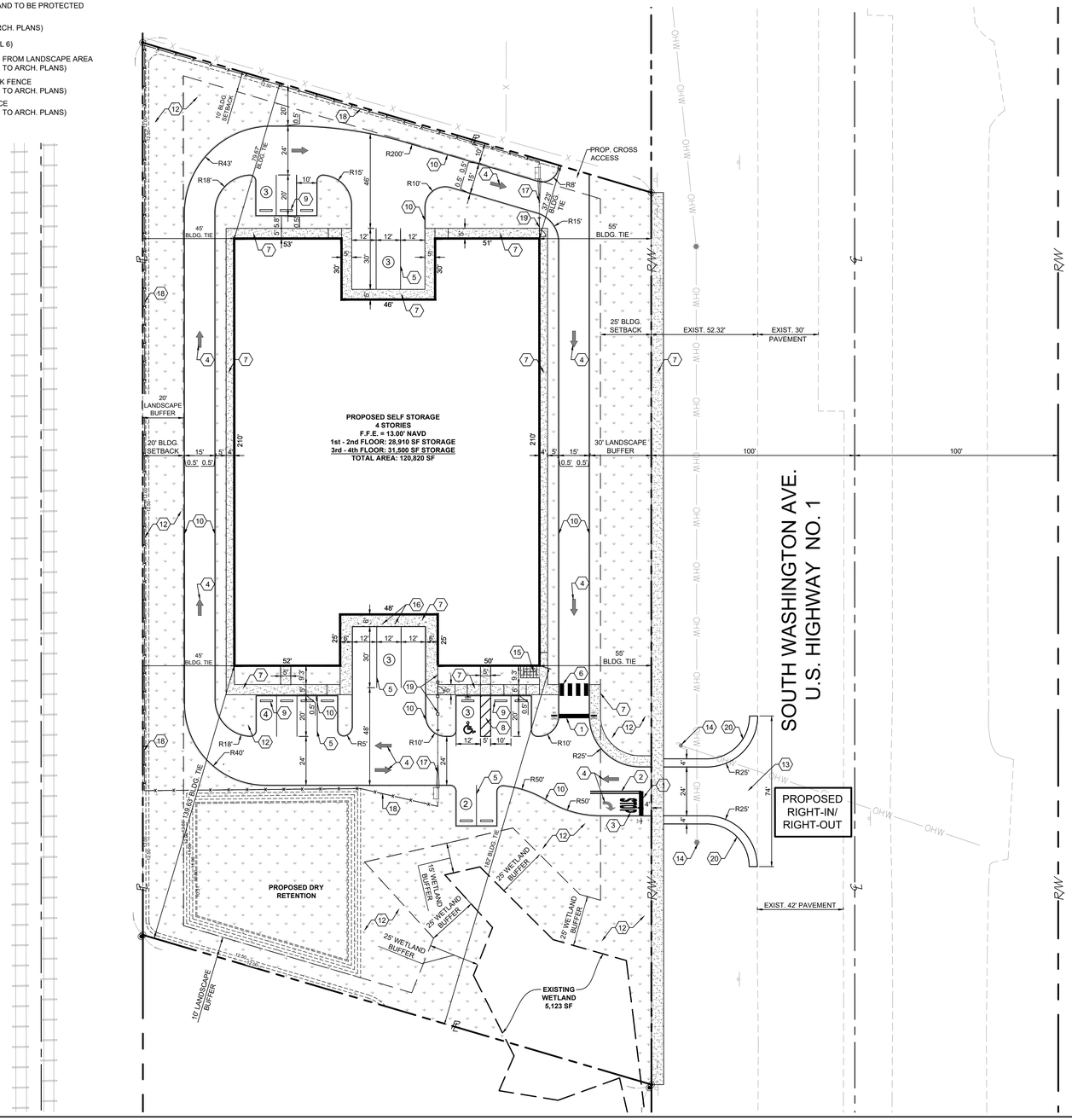
SITE SYMBOLS /LEGEND

- (S) STOP SIGN (R1-1)
- (HC) HANDICAP PARKING SIGN
- (DN) DO NOT ENTER (R5-1)
- (10) PROPOSED PARKING SPACE COUNT
- ACCESSIBLE PARKING SPACE
- PROPOSED SOLID DIRECTIONAL ARROW

HATCH LEGEND

- PROPOSED CONCRETE SIDEWALK
- PROPOSED GRASS (REFER TO LANDSCAPE PLANS FOR DETAILS)
- PROP. 6' HIGH CHAIN LINK FENCE (UNDER SEPARATE PERMIT)
- PROP. 6' HIGH ORNAMENTAL FENCE (UNDER SEPARATE PERMIT)

30 0 30 60
Graphic Scale in Feet



URBN DESIGN
666 N.E. 125th STREET, SUITE 247
NORTH MIAMI, FL 33161
Phone: 305.720.2079
C.O.A. 33221

CHRISTOPHER PATRICK COLLINS LICENSE No. 73819 STATE OF FLORIDA PROFESSIONAL ENGINEER
CHRISTOPHER COLLINS, P.E. REG.# 73819
8/14/2024

This item has been digitally signed and sealed by Christopher P. Collins, P.E. on the date adjacent to the seal.

Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronics copies.

Christopher Collins — Digitally signed by Christopher Collins Date: 2024.08.15 12:30:37 -04'00'

Revision	Date
Comment	
Revision 6	Date
Comment	
Revision 5	Date
Comment	
Revision 4	Date
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Revision 3	Date
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Revision 2	Date
Comment	
Revision 1	Date
Comment	

Designed by:	C.P.C.
Drawn by:	A.T.S.
Checked by:	C.P.C.
Approved by:	C.P.C.
Scale:	1"=30'
Date:	08/07/2024
Job No.:	E006

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Plans for

TITUSVILLE STORAGE
SOUTH WASHINGTON AVENUE
TITUSVILLE, FLORIDA

SITE PLAN

Sheet No.
C-5.0

SKETCH OF TOPOGRAPHIC BOUNDARY SURVEY

REFERENCE PROPERTY ADDRESS:
Vacant Land
5XXX S Washington Avenue
Titusville, Florida 32780

PARCEL ID NUMBER BY BREVARD COUNTY PROPERTY APPARISER'S OFFICE: 22-35-26-00-504.1

LEGAL DESCRIPTION:
The Land is described as follows:

All of Government Lot 3, Section 26, Township 22 South, Range 35 East, lying West of U.S.A. Highway No. 1 as relocated; LESS AND EXCEPT the right-of-way of the Florida East Coast Railroad, said right of way being described as Parcel "4" in Deed from S. James Cohen, as Trustee, to Monni Weisberger, as Trustee, as recorded in Official Records Book 735, Page 80, Public Records of Brevard County, Florida, and ALSO LESS AND EXCEPT land as described in Deed from Monni Weisberger, individually and as Trustee, and Shirley Weisberger, his wife, to Air Ranch Realty, Inc., as recorded in Official Records Book 1084, Page 141, Public Records of Brevard County, Florida, and ALSO LESS AND EXCEPT the following:

Commence on the South line of Section 26, Township 22 South, Range 35 East, Brevard County, at its intersection with the Westerly right of way line of relocated U.S. Highway No. 1; thence run North 15°51'12" West, 788.35 feet along the Westerly right of way of U.S. Highway No.1; thence North 89°25'12" West,260.65 feet; thence South 15°51'12" East, 788.35 feet along the Easterly right of way line of relocated F.E.C. Railway; thence South 89°25'12" East, 260.65 feet along the South line of said Section 26, to the Point of Beginning.

ALSO LESS AND EXCEPT:

A portion of lands described in O.R. Book 3183, Pages 706-707, of the Public Records of Brevard County, Florida, lying in Sections 26 and 27, Township 22 South, Range 35 East, of said Brevard County, being more particularly described as follows:

Beginning at the Southeast corner of said Section 27, said point being the POINT-OF BEGINNING; thence North 89°39'09" West along the South line of said Section 27, a distance of 927.58 Feet to the East line of lands described in O.R. Book 1328, Page 286, of the said Public Records of Brevard County; thence North 00°20'51" East along said East line, a distance of 660.00 Feet to the North line of lands described in O.R. Book 1328, page 328; thence North 89°39'09" West along the North line of lands described in O.R. Book 1328, page 286 and the North line of lands described in Deed Book 69, page 216, Deed Book 79, page 68 and O.R. Book 1033, page 280, of the said Public Records of Brevard County, a distance of 1,262.74 Feet to the West line of lands described in O.R. Book 1033, page 280; thence South 00°20'51" West along said West line, a distance of 635.00 Feet to the North Right-of-Way line of Little League Lane; thence North 89°39'09" West along said North Right-of-Way line, a distance of 440.00 Feet to the East Right-of-Way line of Sisson Road; thence North 00°01'14" East along said East Right-of-Way line, a distance of 1,296.16 Feet to the South Right-of-Way line of a 10 foot road Right-of-Way per Titusville Fruit and Farms Lands Co., according to the Plat thereof, as recorded in Plat Book 2, page 29, of the said Public Records of Brevard County; thence South 89°39'10" East along the said South Right of-Way line, a distance of 2,622.17 Feet to a point on the East line of said Section 27; thence South 89°30'31" East leaving said East line, a distance of 325.12 Feet to the West Right-of Way line of Florida East Coast Rail Road; thence South 15°57'05" East along the said West Right-of-Way line, a distance of 1,377.01 Feet to the South line of said Section 26; thence North 89°32'34" West along said South line, a distance of 695.10 Feet to the POINT-OF BEGINNING.

LEGAL DESCRIPTION BY SURVEYOR OF SAME PARCEL AS MEASURED:

A parcel of land being a portion of the parcel of land described as Parcel No. 1 in O.R. Book 3183, Page 705, of the Public Records of Brevard County, Florida. Said parcel of land described as follows:

Commencing at the Southwest corner of Government Lot 3, Section 26, Township 22 South, Range 35 East, Brevard County, Florida; thence South 89°26'21" East, along the South line of said Government Lot 3, Section 26, a distance of 1060.15 feet to a point lying on the Westerly right of way line of U.S. Highway No. 1 and said point being the Southeast corner of the parcel of land described in O.R. Book 5319, Page 4597, of the Public Records of Brevard County, Florida; thence North 15°51'12" West, along said Westerly right of way line of U.S. Highway No. 1, and the Easterly boundary line of said parcel of land described in O.R. Book 5919, Page 4597, a distance of 788.35 feet to the Northeast Corner of said parcel and said point being the Point of Beginning of the parcel of land herein described; thence continue North 15°51'12" West, along said right of way line, 438.55 feet to the Southeast corner of the parcel of land described in O.R. Book 3933, Page 2432, of the Public Records of Brevard County, Florida; thence North 89°24'58" West, along the South line of said parcel, 260.65 feet to the Southwest corner thereof and said point lying on the Easterly right of way line of the Florida East Coast Railway right of way; thence South 15°51'12" East, along said right of way line, 438.65 feet to the Northwest corner of the aforesaid parcel of land described in O.R. Book 5319, Page 4597; thence South 89°26'21" East, along the North line of said parcel, 260.62 feet to the Point of Beginning.

SURVEYOR'S NOTES:
All distances as shown hereon are based on the US Survey foot.

The property described on this SKETCH OF TOPOGRAPHIC BOUNDARY SURVEY is the same property as described in Exhibit "A" in Title Insurance Commitment, Commitment Number: 23099800 RP, Commitment Effective Date: September 5, 2023 at 5:00 pm issued by Old Republic National Title Insurance Company.

The subject property lies within the lands as described in the terms, covenants, conditions, easements, and other matters contained in Amended Easement Deed by Court Order In Settlement of Landowner Action recorded in O.R. Book 6794, Page 1234, Public Records of Brevard County, Florida. This is a blanket easement document affecting the subject property and contains no plottable matters.

The accompany Survey was made on the ground from June 26th, 2024 to June 29th, 2024 and correctly shows the location of the existing improvements, above ground visible utilities, elevations, and other improvements situated on the above premises and that there are no visible encroachments on the subject property or upon adjacent land abutting said property.

Bearings are based/referred to an assumed meridian where the Easterly boundary line of the subject property bears North 15 degrees 51 minutes 12 seconds West, as shown within the legal description provided to the surveyor.

The total area of the surveyed parcel as described herein contains 109,647.66 square feet more or less (2.517) acres more or less. The square footage was calculated up to the existing property line based on occupation, physical evidence and legal description provided.

The location of the wetlands areas as shown within this survey drawing and noted as Wetlands 1, Wetlands 2 and Wetlands 3 were obtained by the physical location of the wetlands markings performed by Atlantic Enviromental of Florida, LLC under AE Project No. 23759, dated September 23rd, 2023. A combination of the physical location on the field of the wetlands markings along with the Atlantic Enviromental of Florida Report were used to complete the scope of work.

This is a Boundary Survey. This is a resurvey of a real property in accord with the real property legal description.

North arrow direction is based on an assumed meridian.

At the time of Survey, The National Flood Insurance Rate Map for Florida, Community Panel No. 125152 (City of Titusville) 12009 C, 0220 H, FIRM Date 01/29/2021 and Revised with an effective date of 01/29/2021, published by the United States Department of Housing and Urban Development, delineates the herein described parcel land to be situated outside the Special Flood Hazard Area designated by the Federal Emergency Management Agency (FEMA). Subject property lies within Zone "X", areas determined to be outside the 0.2% annual chance floodplain.

All elevations as shown on this survey drawing are referred to the North American Vertical Datum, 1988 (NAVD). The closure in feet, as computed meets the standard of plus minus 0.05 feet times the squared root of the loop distance in miles. Elevations are based on a level loop from and to the following official benchmarks:

BENCHMARK REFERENCES:

- LABINS NGS BENCHMARK - DESIGNATION M 404
STATE/COUNTY- FL/BREVARD
BM Elevation = 5.04 (feet) ADJUSTED - NAVD (1988) Datum
MARK LOGO: NGS
STAMPING: M 404 1991
STATION DESCRIPTION: 0.7 KM (0.4 MI) SOUTHERLY ALONG U.S. HIGHWAY 1 FROM THE JUNCTION OF STATE HIGHWAY 50 (CHENEY HIGHWAY) IN TITUSVILLE, 25.3 M (83.0 FT) SOUTHWEST OF THE SOUTHWEST CORNER OF A RETAINING WALL AROUND A SIGN (HOLIDAY INN), 14.7 M (48.2 FT) EAST OF AND LEVEL WITH THE CENTERLINE OF THE NORTHBOUND LANES OF THE HIGHWAY, 10.0 M (32.8 FT) SOUTHEAST OF UTILITY POLE NUMBER 4 7356 1984 0 1 WITH 2 GUY CABLES, 9.8 M (32.2 FT) WEST OF THE CENTER OF RIVEREDGE DRIVE, AND 1.2 M (3.9 FT) NORTH OF A UTILITY POLE WITH 3 GUY CABLES. NOTE--ACCESS TO THE DATUM POINT IS THROUGH A 5-INCH LOGO CAP.

- LABINS NGS BENCHMARK - DESIGNATION Q 228
STATE/COUNTY- FL/BREVARD
BM Elevation = 7.79 (feet) ADJUSTED - NAVD (1988) Datum
MARK LOGO: NGS
STAMPING: Q 228 1964
STATION DESCRIPTION: 4.8 MI S FROM TITUSVILLE.
ABOUT 4.8 MILES SOUTH ALONG U.S. HIGHWAY 1 FROM THE BAYVIEW ELEMENTARY SCHOOL AT TITUSVILLE, ABOUT 0.85 MILE NORTH OF THE OVERPASS OF STATE HIGHWAY 402, SET ON THE TOP OF THE NORTH END OF THE WEST CONCRETE HEAD WALL OF AN 18-FOOT DOUBLE BOX TYPE CULVERT UNDER THE HIGHWAY, 25 1/2 FEET WEST OF THE CENTER LINE OF THE SOUTHBOUND LANE OF THE HIGHWAY, 17 FEET SOUTH OF THE NORTH END OF THE HEAD WALL AND 1 1/2 FEET BELOW THE LEVEL OF THE HIGHWAY. NOTE-- NOW 4.9 MI. S ALONG U.S. HWY. 1 FROM CITY ADMIN. BLDG. STATE HWY 402 SHOULD READ HWY 405.

Only the easements provided to the surveyor or those shown on the recorded Plat are either noted or plotted hereon. No search within the Public or Private records was performed by this office.

In some instances graphic representations have been exaggerated to more clearly illustrate the relationship between physical improvements and/or lot lines. In all cases dimensions shall control the location of the improvements over scaled positions.

The dimensions and directions shown hereon are in substantial agreement with record and calculated values unless otherwise noted. All dimensions are based directly on the recovered monumentation and calculations, unless otherwise noted. All property corners as shown within this survey drawing were recovered during the period of field work.

Survey done by occupation, physical evidence, the recovery of existing property corners, field measurements, calculations, adjacent plats and legal description provided to the surveyor and also from the Brevard County Public Records/ Property Appraiser Office and no claims as to ownership are made or implied.

Adjacent properties were not investigated at the time of this Survey.

Obstructed corners are witnessed by improvements.

There is no observable evidence of the site being used as a solid waste dump, sump or sanitary landfill.

Property is subject to restrictions, conditions, limitations, easements, and reservations of record and existing zoning ordinances. There may be restrictions not shown on this survey that may affect the future development of this property. Such restrictions might be found in the Public Records or Building and Zoning Department of Brevard County, Florida, or the City of Titusville. Code Restrictions not reflected on this survey.

Any notorious evidence of occupation and/or use of the described parcel for Right-of-Way, Ingress or Egress are shown on this survey drawing. However, this survey does not purport to reflect any recorded instruments for Right-of-Way other than shown on the recorded plat or stated in the legal description, as it appears on this drawing.

Only the above ground visible surface indications of the underground utilities have been located. There may be other underground utilities in addition to those evidenced by visible appurtenances as shown on this sketch. Owner of his agent should verify all utility locations with the appropriate utility provider before using. No underground footings were located and no subsurface investigation was performed at the time of survey.

The scope of this survey is to define the boundary lines as defined by the deed and referenced plats, and show all above ground improvements.

The legal ownership of the fences and/or walls as shown hereon was not determined, and the locations as shown are based on the recovered boundary monumentation and calculations.

Distances from property lines to fences or walls may slightly varies due to their irregularity, width and composition. Fences or walls not always travel on a straight line and in most cases meander through trees, hedges, vines and heavy landscaping usually located along boundary lines, therefore the resultant of said dimensions as shown hereon may vary slightly within 0.30' to 0.50' of a foot more or less.

Any fencing, walls, entrance features and landscaping could be subject to a "Safe Sight Distance Triangle" rule.

Call 811 or visit www.sunshine811.com before digging.

This survey is intended for the use of the parties to whom this survey is certified to and for. Any reproduction is not an original. This surveyor retains an original to verify these dated contents for validity.

This survey was conducted for the purpose of a "Topographic Boundary Survey" only and is not intended to delineate the regulatory jurisdiction of any federal, state, regional or local agency, board, commission or other entity. This survey does not reflect or determine legal ownership.

This survey map is not valid without the original signature and seal of a Florida Licensed Surveyor and Mapper.

The accuracy obtained for all horizontal control measurements and office calculations of closed geometric figures, meets or exceeds the Standards of Practice as set forth by the Florida Board of Professional Surveyors and Mappers as contained in Chapter 5J-17.051(3)(b)15.b.ii of 1 foot in 10,000 feet for Commercial / High Risk Areas.

This sketch shown hereon in its graphic form is the record depiction of the surveyed lands described herein and will in no circumstances be supplanted in authority by any other graphic or digital format. This Sketch of Topographic Boundary Survey consists of 3 pages. Survey not valid without all the pages. Page 2 of 3 is intended to be displayed at a scale of 1" = 50' and Page 2 of 3 is intended to be displayed at a scale of 1" = 30'.

LOCATION MAP
NOT TO SCALE

Sunshine811

CALL 811 OR VISIT WWW.SUNSHINE811.COM BEFORE DIGGING.
CALL BEFORE YOU DIG. IT'S THE LAW!

PHYSICAL EVIDENCE OF UNDERGROUND GAS LINES NEAR THE EASTERLY BOUNDARY LINE OF THE SUBJECT SITE. USE EXTREME CAUTION PRIOR DESIGN, CONSTRUCTION OR DIGGING.

This is to certify to the above named firm and or persons that the "SKETCH OF TOPOGRAPHIC BOUNDARY SURVEY" of the herein described property is true and correct to the best of my knowledge and belief as recently surveyed under my direction, also there are no visible encroachments other than those shown. Owner or his representative furnished the legal description contained herein. Other recorded instruments may affect this property. Surveyor has not examined the abstract of title. Locations of utilities on or adjacent to the property were not secured unless specifically requested by owner. I further certify that this map or plat meets the Standards of Practice Requirements, adopted by the Board of Professional Surveyors and Mappers, pursuant to Chapter 472.027 Florida Statutes, as set forth in Chapter 5J-17, Florida Administrative Code, under Sections 5J-17.051 and 5J-17.052 and is a "BOUNDARY SURVEY" as defined in Section 5J-17.050.

JORGE L. CABRERA
Professional Surveyor & Mapper, # 6487
State of Florida

JORGE L. CABRERA LICENSE No. 6487 STATE OF FLORIDA PROFESSIONAL SURVEYOR & MAPPER

This drawing is the property of Jorge L. Cabrera Professional Surveyor & Mapper Reproductions of this drawing are not valid unless Signed and embossed with the surveyor's seal.

JORGE L. CABRERA
Professional Surveyor and Mapper
State of Florida
PLS/PSM License No: 6487
2852 S.W. 149th Place, Miami, Florida 33185
Phone: (305) 302-2522 Fax: (305) 207-9537
Email: jorgelcabrerapls@gmail.com

No.	Date	Job No.	Description

Prepared for:
MRMD Management / GG Equity
10 East 39th Street New York, NY

CHECKED BY:	JLC.
DRAWN BY:	JF / ELF
FIELD DATE:	06/28/2024
DATE:	07/01/2024
SCALE:	AS SHOWN
JOB No.	24-8065

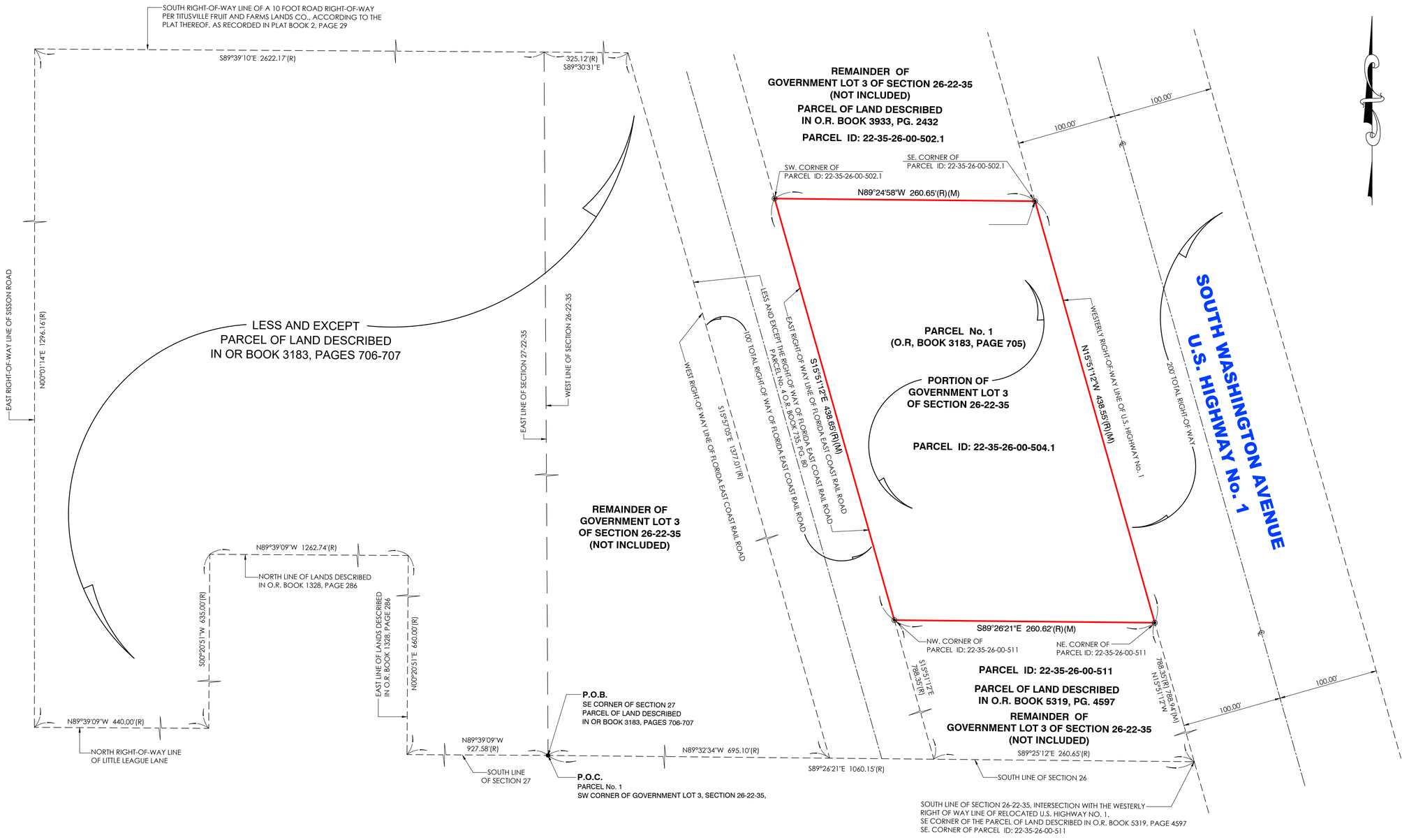
SHEET: 1 OF 3

SKETCH OF TOPOGRAPHIC BOUNDARY SURVEY

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.



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10 East 39th Street New York, NY

CHECKED BY:	JLC.
DRAWN BY:	JF / ELF
FIELD DATE:	06/28/2024
DATE:	07/01/2024
SCALE:	1" = 50'
JOB No.	24-8065

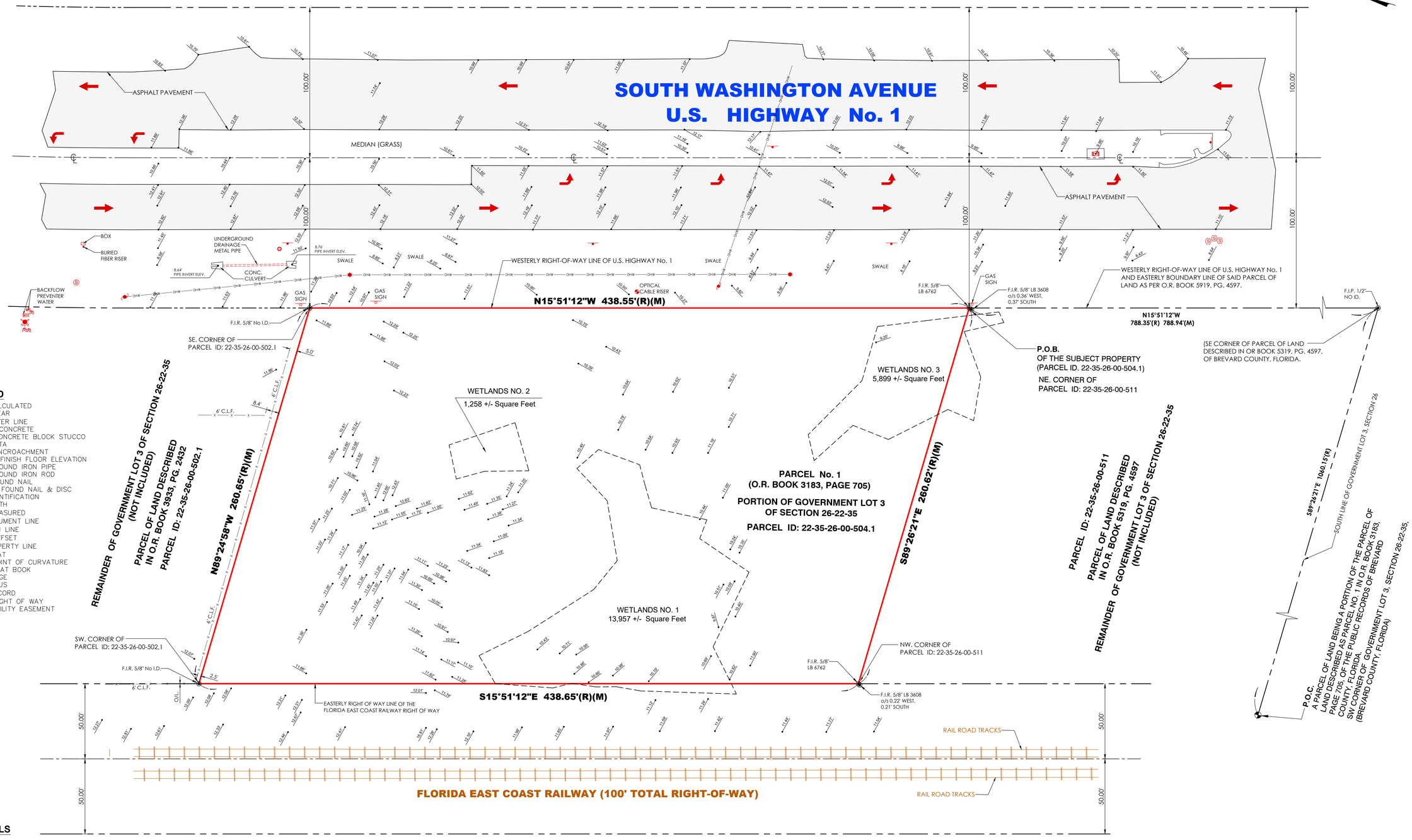
SHEET: 2 OF 3

SKETCH OF TOPOGRAPHIC BOUNDARY SURVEY

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.



LEGEND

(C) = CALCULATED
CL. = CLEAR
℄ = CENTER LINE
CONC. = CONCRETE
CBS. = CONCRETE BLOCK STUCCO
Δ = DELTA
ENC. = ENCROACHMENT
F.F.E.L. = FINISH FLOOR ELEVATION
F.I.P. = FOUND IRON PIPE
F.I.R. = FOUND IRON ROD
F.N. = FOUND NAIL
F.N&D. = FOUND NAIL & DISC
I.D. = IDENTIFICATION
L = LENGTH
(M) = MEASURED
M = MONUMENT LINE
O/L = ON LINE
O/S = OFFSET
P = PROPERTY LINE
(P) = PLAT
P.C. = POINT OF CURVATURE
P.B. = PLAT BOOK
PG. = PAGE
R = RADIUS
(R) = RECORD
R/W = RIGHT OF WAY
U.E. = UTILITY EASEMENT

SYMBOLS

- SIGN
- CATCH BASIN
- TRAFFIC FLOW
- CONCRETE LIGHT POLE
- CONCRETE POWER POLE
- WOOD POWER POLE
- BFPV BACKFLOW PREVENTER(WATER)
- GAS VALVE
- FIRE HYDRANT
- WATER VALVE
- OPTICAL CABLE RISER
- SANITARY SEWER MANHOLE
- 0.00' EXISTING ELEVATION
- OHW OVERHEAD LINES
- x CHAIN LINK FENCE (C.L.F.)

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SHEET: 3 OF 3

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Aerial 2024

CUP #9-2024

0 145 290 580 Feet

Community Development Department

Aerial photography provided by the Brevard County Property Appraiser's Office

10/8/2024

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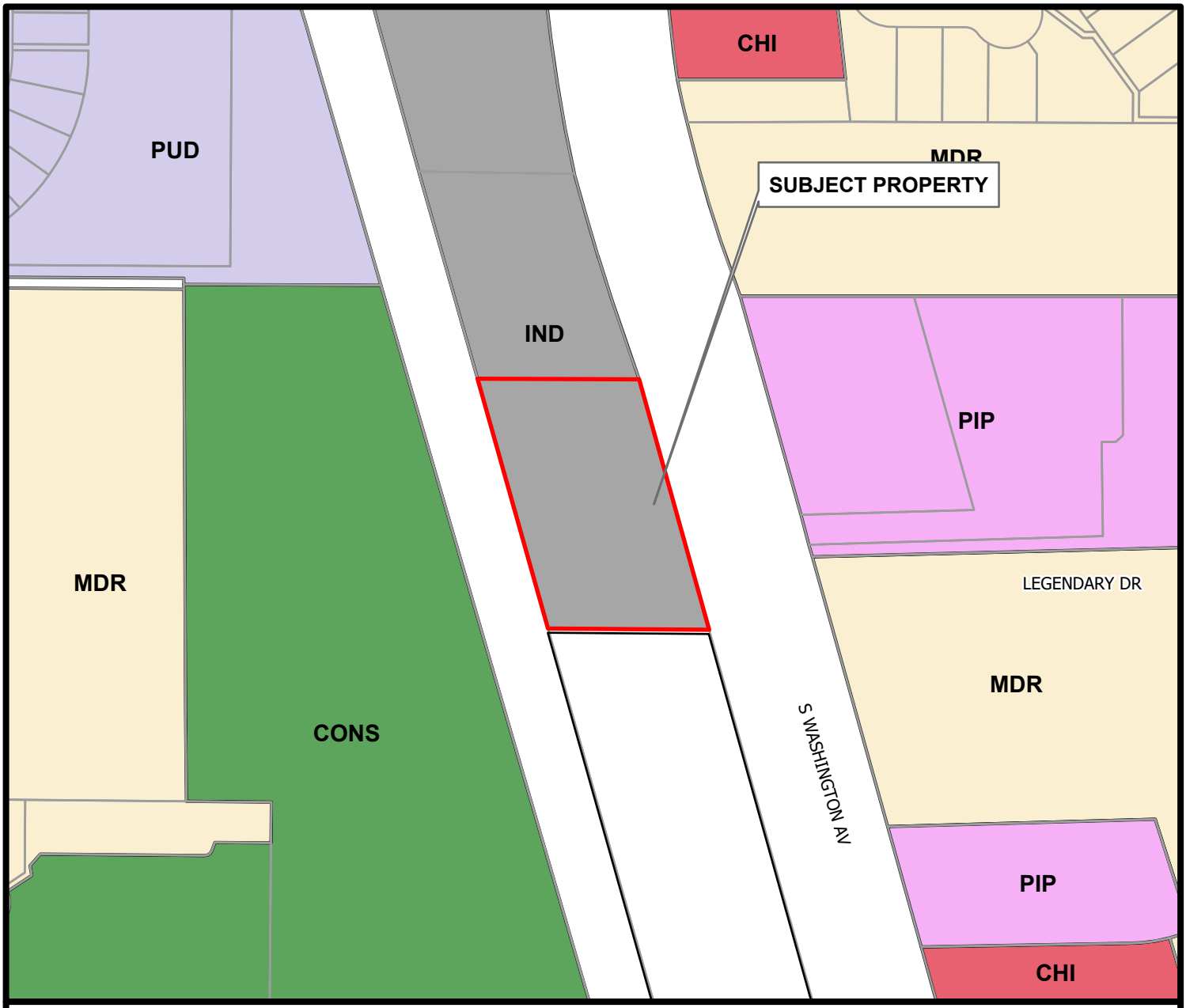

LOCATION OF PROPERTY AND FUTURE LAND USE MAP

CHI	COMMERCIAL HIGH INTENSITY	ED	EDUCATIONAL	PIP	PLANNED INDUSTRIAL PARK	RES-2	RESIDENTIAL-2
CLI	COMMERCIAL LOW INTENSITY	IND	INDUSTRIAL	PSP	PUBLIC/ SEMI-PUBLIC	RMU	REGIONAL MIXED USE
CONS	CONSERVATION	HDR	HIGH-DENSITY RESIDENTIAL	PUD	PLANNED UNIT DEVELOPMENT	SMU	SHORELINE MIXED-USE
DMU	DOWNTOWN MIXED-USE	MDR	MEDIUM-DENSITY RESIDENTIAL	REC	RECREATIONAL	UMU	URBAN MIXED-USE
		LDR	LOW-DENSITY RESIDENTIAL	RES-1	RESIDENTIAL-1	US1	US-1 CORRIDOR

Subject

N W E S

0 160 320 640 Feet

Community Development Department

10/8/2024

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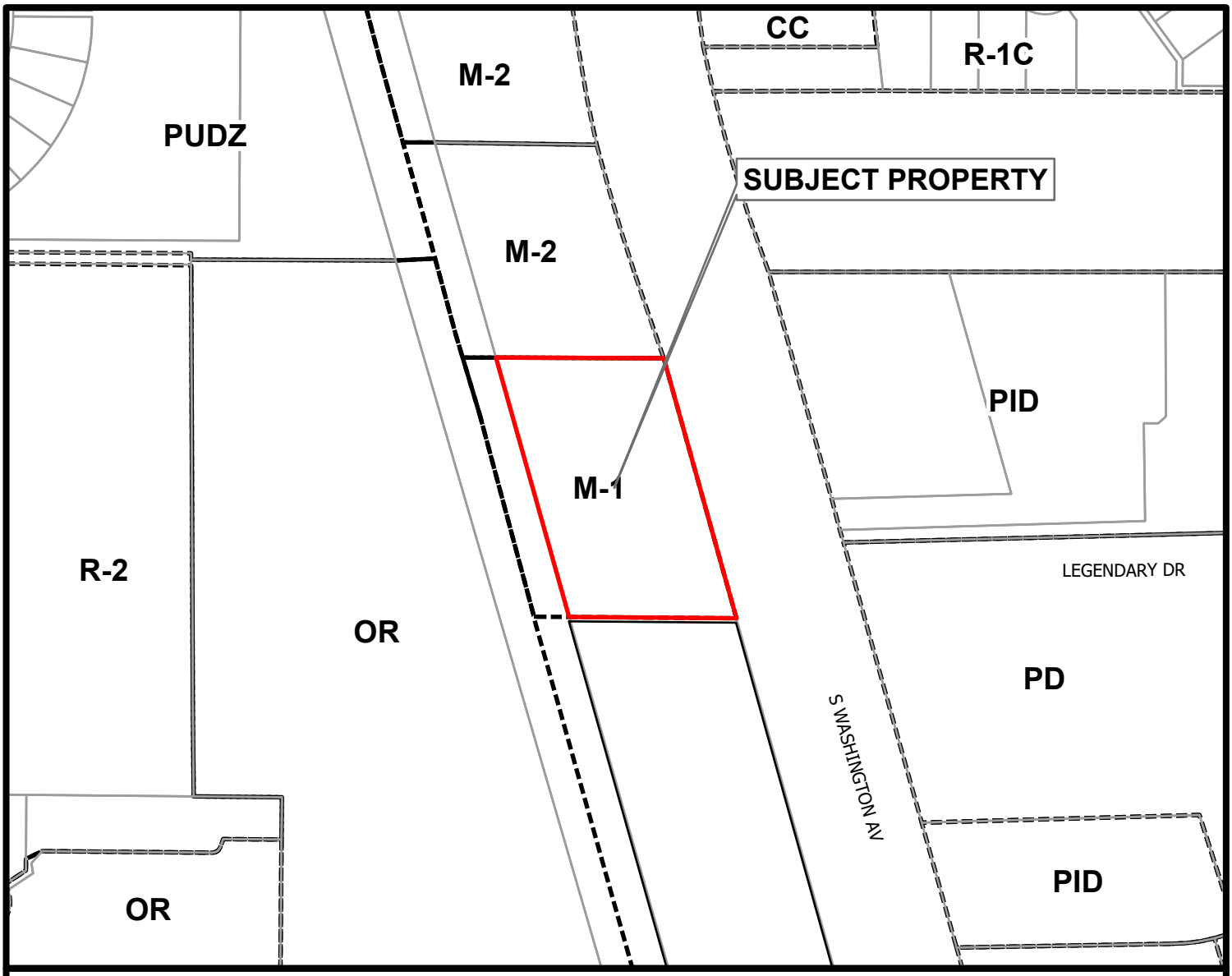

ZONING MAP

RESIDENTIAL DISTRICTS

RE	RESIDENTIAL ESTATES
RR	RURAL RESIDENTIAL
R-1A	SINGLE FAMILY, LOW DENSITY
R-1B	SINGLE FAMILY, MEDIUM DENSITY
R-1C	SINGLE FAMILY, HIGH DENSITY
R-2	MULTIFAMILY, MEDIUM DENSITY
R-3	MULTIFAMILY, HIGH DENSITY
RMH-1	RESIDENTIAL MANUFACTURED HOUSING SUBDIVISION
RMH-2	RESIDENTIAL MANUFACTURED HOUSING PARK

COMMERCIAL DISTRICTS

HM	HOSPITAL MEDICAL
T	TOURIST
NC	NEIGHBORHOOD COMMERCIAL
CC	COMMUNITY COMMERCIAL
RC	REGIONAL COMMERCIAL
OP	OFFICE PROFESSIONAL

INDUSTRIAL DISTRICTS

M-1	LIGHT INDUSTRIAL SERVICES AND WAREHOUSING
M-2	HEAVY INDUSTRIAL
M-3	HIGHWAY INDUSTRIAL INFILL
PID	PLANNED INDUSTRIAL DEVELOPMENT

OVERLAY DISTRICTS

TSA	TITUSVILLE SHORELINE AREA
AIA	AIRPORT IMPACT AREA
WCA	WETLAND AND CONSERVATIONA AREA
ACC	AREA OF CRITICAL CONCERN
HPA	HISTORIC PRESERVATION AREA

SPECIAL DISTRICTS

GU	GENERAL USE
OR	OPEN SPACE AND RECREATION
UMU	URBAN MIXED USE
SMU	SHORELINE MIXED USE
RHP	RESIDENTIAL HISTORIC PRESERVATION
RMU	REGIONAL MIXED USE
PD	PLANNED DEVELOPMENT
P	PUBLIC
UV	URBAN VILLAGE
DMU	DOWNTOWN MIXED USE
IRCN-R	INDIAN RIVER CITY NEIGHBORHOOD RESIDENTIAL
IRCN-C	INDIAN RIVER CITY NEIGHBORHOOD COMMERCIAL

N W E S

TITUSVILLE, FLORIDA FOUNDED 1867

CUP#9-2024

Base Map

City Limits

Zoning

Subject

0 125 250 500 Feet

Community Development Department

10/8/2024

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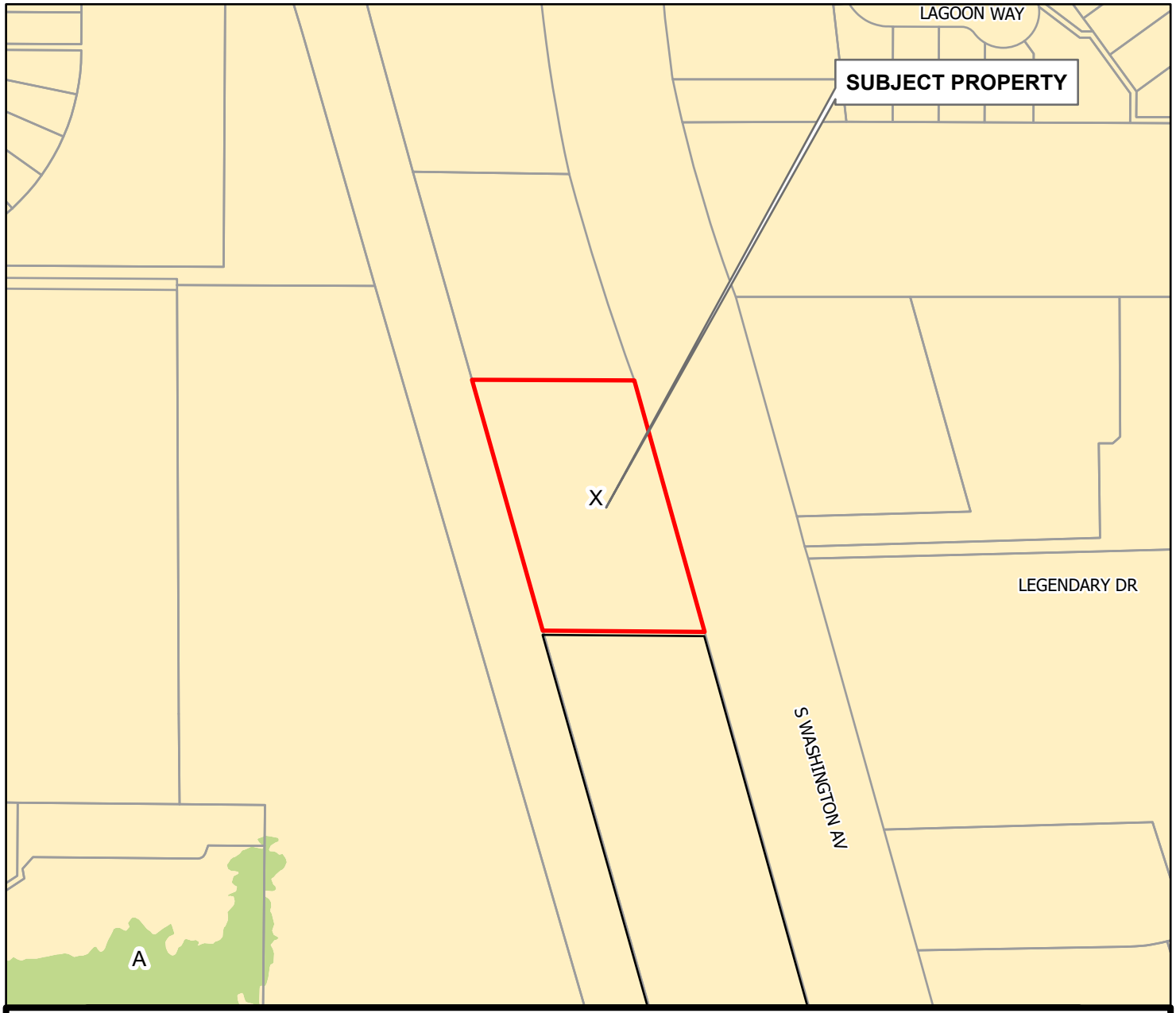

FEMA FLOOD HAZARD AREAS

CUP #9-2024

Special Flood Hazard Area Zones

- A
- A0
- AE
- AO
- VE

Moderate Flood Hazard Area Zone

- X5

Minimal Flood Hazard Zones

- C
- X
- X .2 PCT

Other Flood Zone Areas

- D
- FW

N W E S

TITUSVILLE, FLORIDA FOUNDED 1867

0 125 250 500 Feet

Community Development Department | Source: FEMA FHA Update, 01/29/2021 | 10/8/2024

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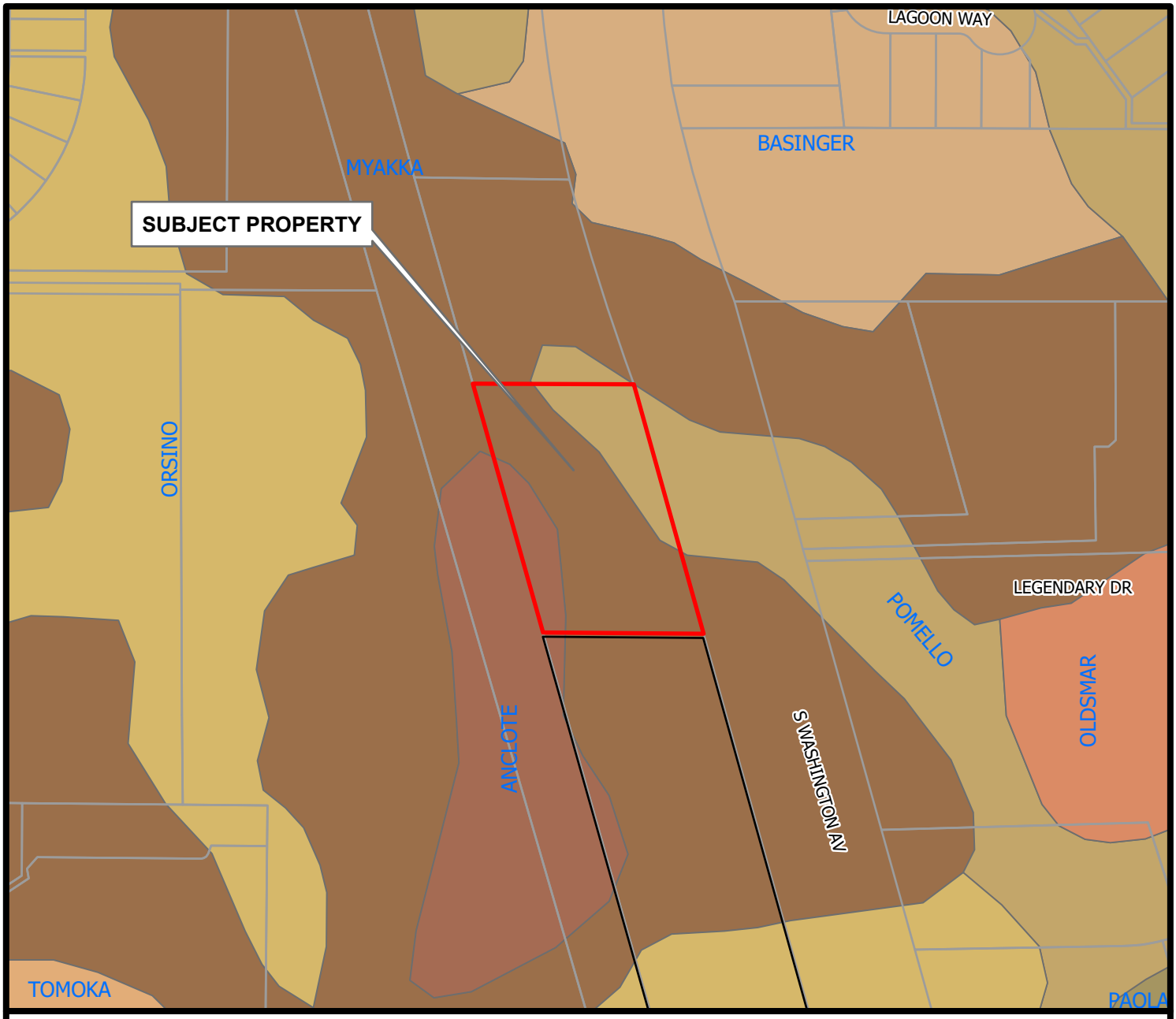

SOILS IN THE VICINITY OF SUBJECT PROPERTY
CUP#9-2024

SoilName

- ANCLOTE
- BASINGER
- MYAKKA
- OLDSMAR
- ORSINO
- PAOLA
- POMELLO
- TOMOKA

N W E S

0 125 250 500 Feet

Community Development Department

10/8/2024

Soils data source: The U.S. Department of Agriculture, Natural Resources Conservation Service. (2019)

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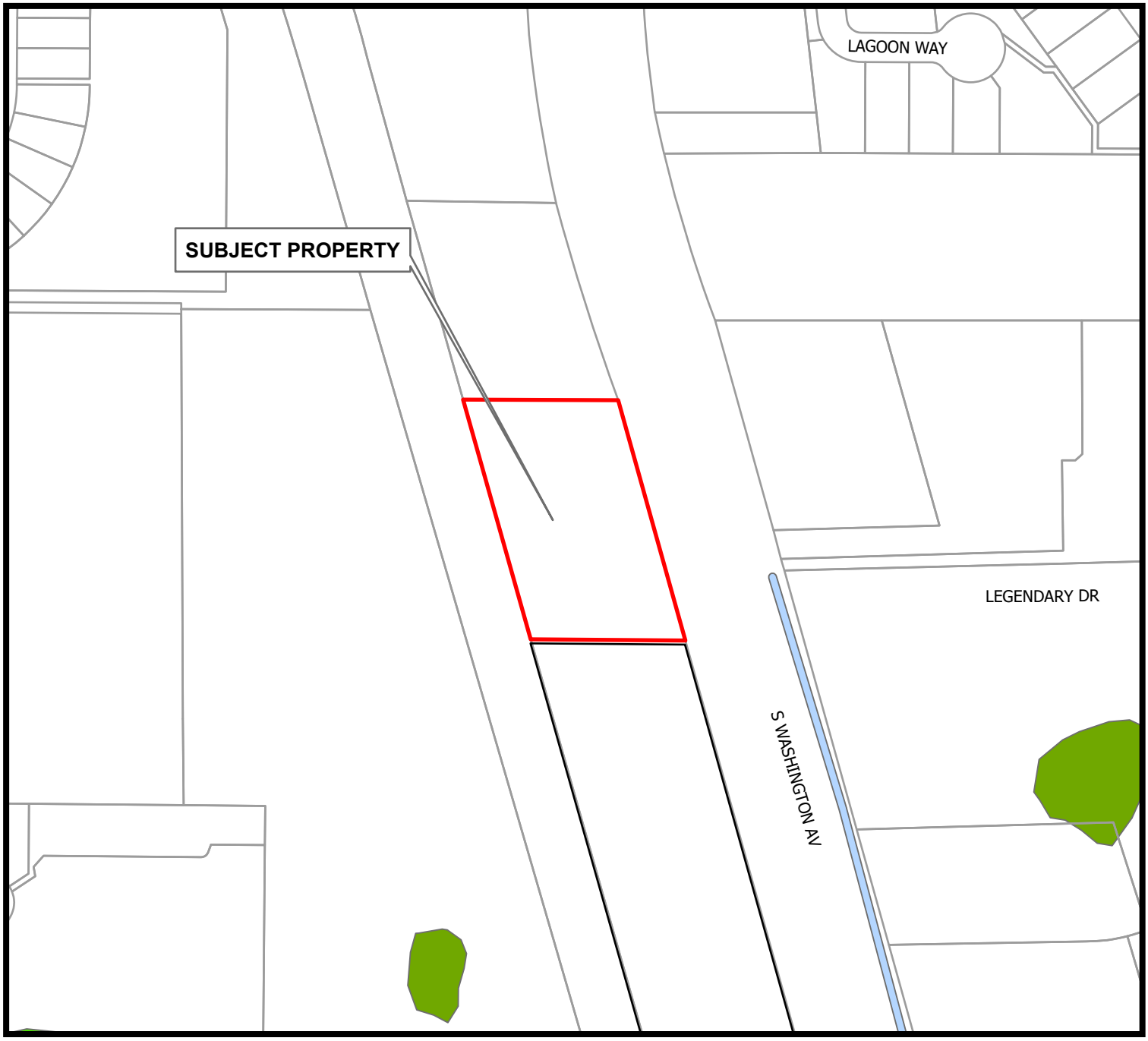

WETLANDS IN VICINITY OF PROPERTY

CUP#9-2024

N
W
E
S
TITUSVILLE, FLORIDA
FOUNDED 1867

WETLAND_TY

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Riverine

10/8/2024

Scale:1:3,000

Community Development Department
Source: USFWS NWI (2023)

This data set represents the approximate location and type of wetlands and deepwater habitats. The primary intended use is for regional and watershed data display and analysis, rather than specific project data analysis.

Q:\GIS\Community Development\PLANNING\Planning Templates\ArcPro\PlanningMaps\PlanningMaps.aprx

Verified
02/19/2026
PJ

AD#12088903 2/19/2026

CITY OF TITUSVILLE
NOTICE OF PUBLIC HEARINGS

PLEASE TAKE NOTICE that the City Council of the City of Titusville will hold a public hearing on **Tuesday, March 10, 2026**, at a meeting commencing at **6:30 p.m.**, in the Council Chamber on the second floor of Titusville City Hall, 555 South Washington Avenue, Titusville, Florida 32796, to hear interested persons with regard to **Conditional Use Permit Application No. 9-2024** – City of Titusville Land Development Regulations (LDR) Section 28-214. – Mini-warehouse. - To allow a mini-warehouse use, for property located in the Light Industrial Services and Warehousing (M-1) zoning district, located west of US Highway 1 and South of State Road 50, identified by Brevard County Parcel ID No. 22-35-26-00-504.1, as submitted by Paul Goldberg, authorized representative of GFG Private Funds, LLC, Owner.

PLEASE ALSO TAKE NOTICE that on **Wednesday, March 4, 2025**, at a meeting commencing at **6:00 p.m.**, the Planning and Zoning Commission will hold a public hearing to hear interested persons with regard to these matters for recommendation to the City Council. This meeting and the public hearings will be held in the in the Council Chamber on the second floor of Titusville City Hall, 555 South Washington Avenue, Titusville, Florida 32796.

The proposed conditional use permit application may be inspected by the public in the City of Titusville Planning Department, 555 S. Washington Avenue, Titusville, FL 32796 during normal business hours, Monday through Friday (excluding holidays and weekends). All interested parties are hereby advised that they may appear at said meetings and public hearings and be heard with respect to the proposed conditional use permit application.

These matters are subject to the quasi-judicial rules of procedure. Interested parties should limit contact with the Planning and Zoning Commission and the City Council on this topic to properly noticed public hearings or to written communications to the City Clerk's Office.

Any person who decides to appeal any decision of the City Council or the Planning and Zoning Commission with respect to any matter being considered at these meetings will need to ensure that a verbatim record of the proceedings is made, which record includes the testimony and evidence upon which the appeal is to be based.

The City desires to accommodate persons with disabilities. Accordingly, any physically handicapped person, pursuant to Chapter 286.26 Florida Statutes, should, at least 48 hours prior to the meeting, submit a request that the physically handicapped person desires to attend the meeting to the City Clerk's Office.

Wanda F. Wells, MMC, City Clerk,
City of Titusville,
555 South Washington Avenue,
Post Office Box 2806,
Titusville, Florida 32781-2806
Phone 321-567-3686 and
Fax 321-383-5704

florida today

Verified
02/19/26
PI.

Public Notices

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AD#12088903 2/19/2026

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Titusville, Florida 32781-2806
Phone 321-567-3686 and
Fax 321-383-5704

City of Titusville

"Gateway to Nature and Space"

REPORT

To: Members of the City Council

From: Thomas Abbate, City Manager

Subject: **Contract for Bayview/Seminole Lift Stations Project**

Department/Office: Public Works

Recommended Action:

Award Contract for Bid CN26-B-004/LR to AMCON Development Group LLC of Winter Springs, FL for the replacement of Seminole Lift Station and Demolition of Bayview Lift Station in the amount of $4,135,774.83 and authorize the Mayor to execute the Contract.

Summary Explanation & Background:

This item was tabled at the January 29, 2026 Council Meeting to allow for additional discussion. A public meeting was subsequently held on February 6, 2026.

The private survey discussed at the January 29, 2026 Council meeting has since been received, and the project design has been revised to align with the findings of that survey. The updated design confirms that the project will be constructed entirely within the public right-of-way. The engineering firm, CDM Smith, has accepted responsibility for the survey discrepancy and completed the necessary design revisions at no additional cost.

Additional concerns raised during the public meeting focused primarily on construction sequencing and maintaining access to adjacent properties. These matters have been discussed with the contractor and will continue to be coordinated with residents to ensure property access is maintained throughout construction. Some attendees also expressed concern that the existing concrete roadway would be replaced with asphalt. They were informed that the project includes replacement with river rock concrete, not asphalt. Staff has also agreed to coordinate the type of preferred fence with the adjacent resident.

The Bayview lift station is a 1960s bunker style lift station located at Bayview St and Riverside Drive along the bank of the Indian River Lagoon. Over the years, this lift station has been subject to erosion related to hurricanes with various remediation efforts needed due to it's proximity to the bank of the Lagoon. In an effort to reduce sewer

infrastructure along the river, on May 24, 2022, City Council approved the award of work order #CDMWR011 to CDM Smith, Inc. to provide engineering consulting services including, but not limited to, the preparation of design drawings and specifications, permitting, bidding assistance, and construction administration services to demolish the existing Bayview Lift Station (LS) and divert its sanitary sewer collection system to a new Seminole LS. Due to the change in depth required to re-route the sewer from the Bayview lift station, the Seminole lift station must be replaced. The Seminole lift station was last renovated in 2011 and construction of the new lift station will consist of upgraded infrastructure, a retaining wall and shoreline restoration.

The bid for the above-described work was advertised on November 7, 2025 as Bid CN26-B-004/LR. 54 vendors were planholders and five (5) vendors submitted sealed bids, which were opened on January 7, 2026, with the following bid tabulation.

Bidder	Total Bid Price
AMCON Development Group LLC	$4,135,774.83
MASCI General Contractor, Inc	$4,204,732.93
Gregori Construction Inc	$4,457,000.00
Danus Utilities Inc	$5,525,500.00
Sanpik Inc	$5,733,728.00

After review of the apparent low bidder, staff recommends moving forward with the award to AMCON Development Group LLC of Winter Springs, FL.

Alternatives:
Do not award the contract and do not move forward with the project.

Item Budgeted:
Yes

Source/Use of Funds/Budget Book Page:
401-5555-536.65-00 WR2307, Bayview Lift Station Elimination - $1,602,764
401-5555-536.65-00 WR2604, LS- Bayview Lift Station Replacement - $2,533,011

Strategic Plan:
The project aligns with Strategic Planning goal 1 and 2, Quality of Life and Efficient and Effective Services.

Strategic Plan Impact:
The project protects the Indian River Lagoon by removing old infrastructure from the shoreline. In addition, the project commits to the capital improvement plan by removing aging infrastructure and replacing with new infrastructure.

ATTACHMENTS:
1. 26-B-004LR bid tabulation sheet

2. Exhibit 2 AMCON Development Group LLC
3. Exhibit 1 26B004LR
4. CN26B004 LR CONTRACT v2
5. Updated Plan - Bayview_Seminole

BID NUMBER: 26-B-004LR
TITLE: Replacement of Seminole Lift Station and Demolition of Bayview Lift Station
DUE DATE: January 7, 2026 @ 3:00 P.M.
LEGEND: LS = LUMP SUM TN=TONS SY = SQUARE YARDS
EA = EACH LF = LINEAR FOOT GM = GRAM

				BID ITEMS			
				AMCON Development Group LLC		MASCI General Contractor, Inc	
ITEMNO.	DESCRIPTION	NO. of UNITS	UNITS	UNIT PRICE	SUBTOTAL	UNIT PRICE	SUBTOTAL
GENERAL							
1	Bonds and Insurance	1	LS	$ 103,413.00	$ 103,413.00	$ 29,581.20	$ 29,581.20
2	Indemnification	1	LS	$ 136.00	$ 136.00	$ 1,000.00	$ 1,000.00
3	Mobilization and Demobilization (Not greater than 2.5% of Base Bid)	1	LS	$ 95,989.00	$ 95,989.00	$ 101,738.43	$ 101,738.43
4	Maintenance of Traffic	1	LS	$ 64,875.00	$ 64,875.00	$ 35,448.00	$ 35,448.00
5	Erosion and Sedimentation Control	1	LS	$ 19,338.00	$ 19,338.00	$ 8,742.00	$ 8,742.00
CIVIL							
	Gravity Sewer						
6	12-inch PVC Gravity Sewer Piping 0-8 Feet Deep	360	LF	$ 342.31	$ 123,231.60	$ 542.00	$ 195,120.00
7	12-inch PVC Gravity Sewer Piping 8-10 Feet Deep	580	LF	$ 347.49	$ 201,544.20	$ 583.00	$ 338,140.00
8	12-inch PVC Gravity Sewer Piping 10-12 Feet Deep	290	LF	$ 457.07	$ 132,550.30	$ 599.00	$ 173,710.00
9	10-inch PVC Gravity Sewer Piping	13	LF	$ 576.00	$ 7,488.00	$ 540.00	$ 7,020.00
10	12-inch DR-18 Gravity Sewer Piping	20	LF	$ 414.90	$ 8,298.00	$ 542.00	$ 10,840.00
11	Sewer Manhole 7 Feet Deep	1	EA	$ 53,366.00	$ 53,366.00	$ 25,700.00	$ 25,700.00
12	Sewer Manhole 9 Feet Deep	2	EA	$ 51,588.00	$ 103,176.00	$ 27,821.00	$ 55,642.00
13	Sewer Manhole 10.5 Feet Deep	1	EA	$ 52,371.00	$ 52,371.00	$ 28,854.00	$ 28,854.00
14	Sewer Manhole 11.5 Feet Deep	2	EA	$ 58,120.00	$ 116,240.00	$ 29,983.00	$ 59,966.00
15	Pavement	3050	SY	$ 267.75	$ 816,637.50	$ 183.27	$ 558,973.50
	Bayview Lift Station						
16	Demolition of Bayview Lift Station	1	LS	$ 142,877.00	$ 142,877.00	$ 252,388.00	$ 252,388.00
	Seminole Lift Station						
17	Construct Precast Wet Well	1	LS	$ 467,744.00	$ 467,744.00	$ 289,520.00	$ 289,520.00
18	Construct Lift Station and All Associated Appurtenances	1	LS	$ 548,717.00	$ 548,717.00	$ 513,925.00	$ 513,925.00
19	Submersible Pump	2	EA	$ 60,965.50	$ 121,931.00	$ 97,230.00	$ 194,460.00
20	8-inch DIP Force Main (wet well)	42	LF	$ 379.24	$ 15,928.08	$ 1,120.00	$ 47,040.00
21	8-inch DIP Force Main and Fittings (above ground)	1	LF	$ 45,826.00	$ 45,826.00	$ 58,155.00	$ 58,155.00
22	8-inch Magnetic Flow Meter	1	EA	$ 20,817.00	$ 20,817.00	$ 14,900.00	$ 14,900.00
23	8-inch DIP Force Main (buried RJ)	50	LF	$ 374.74	$ 18,737.00	$ 293.56	$ 14,678.00
24	8-inch DIP Tee	1	EA	$ 2,331.00	$ 2,331.00	$ 5,245.00	$ 5,245.00
25	8-inch DIP 90 degree bend (buried RJ)	3	EA	$ 1,947.00	$ 5,841.00	$ 2,100.00	$ 6,300.00
26	8-inch DIP 45 degree bend (buried RJ)	1	EA	$ 1,837.00	$ 1,837.00	$ 1,975.00	$ 1,975.00
27	8-inch Gate Valve	1	EA	$ 5,663.00	$ 5,663.00	$ 4,050.00	$ 4,050.00
28	8-inch Tapping Sleeve and Valve	1	EA	$ 22,412.00	$ 22,412.00	$ 9,300.00	$ 9,300.00
29	8-inch DIP Emergency Pump-out Connection	1	EA	$ 8,493.00	$ 8,493.00	$ 12,025.00	$ 12,025.00
30	8-inch Plug Valve	3	EA	$ 7,100.00	$ 21,300.00	$ 5,854.00	$ 17,562.00
31	8-inch Check Valve	2	EA	$ 6,699.00	$ 13,398.00	$ 8,700.00	$ 17,400.00
32	Air Release Valve	3	EA	$ 8,375.67	$ 25,127.01	$ 3,876.00	$ 11,628.00
33	Pipe Support	10	EA	$ 803.30	$ 8,033.00	$ 1,400.00	$ 14,000.00
34	Fence	200	LF	$ 113.07	$ 22,614.00	$ 43.15	$ 8,630.00
35	Gate	1	EA	$ 2,646.00	$ 2,646.00	$ 2,500.00	$ 2,500.00
36	Concrete Driveway, Walkways, Pads	100	SY	$ 340.14	$ 34,014.00	$ 110.00	$ 11,000.00
37	Generator Pad	14	CY	$ 1,328.36	$ 18,597.04	$ 2,500.00	$ 35,000.00
38	Retaining Walls	1	LS	$ 90,550.00	$ 90,550.00	$ 110,600.00	$ 110,600.00
39	Bollards	2	EA	$ 1,425.00	$ 2,850.00	$ 1,020.00	$ 2,040.00
40	Guardrail	26	LF	$ 109.85	$ 2,856.10	$ 139.50	$ 3,627.00
41	Sod	7300	SF	$ 1.70	$ 12,410.00	$ 5.00	$ 36,500.00
42	Relocate Water Service, Backflow, and Hose Bib	1	LS	$ 3,549.00	$ 3,549.00	$ 2,500.00	$ 2,500.00
43	Restore Curb and Gutter	20	LF	$ 72.65	$ 1,453.00	$ 159.24	$ 3,184.80
44	Demolition of Seminole Lift Station	1	LS	$ 90,959.00	$ 90,959.00	$ 365,897.00	$ 365,897.00
ELECTRICAL							
45	Construct Electrical Equipment	1	LS	$ 264,497.00	$ 264,497.00	$ 315,268.00	$ 315,268.00
46	Standby Generator	1	LS	$ 118,114.00	$ 118,114.00	$ 117,960.00	$ 117,960.00
47	FPL Allowance	1	NA	$ 75,000.00	$ 75,000.00	$ 75,000.00	$ 75,000.00
TOTAL BID PRICE					**$ 4,135,774.83**		**$ 4,204,732.93**

Gregori Construction Inc		Danus Utilities Inc		Sanpik Inc	
UNIT PRICE	SUBTOTAL	UNIT PRICE	SUBTOTAL	UNIT PRICE	ACTUAL COST
$ 40,000.00	$ 40,000.00	$ 225,000.00	$ 225,000.00	$ 250,000.00	$ 250,000.00
$ 100.00	$ 100.00	$ 100,000.00	$ 100,000.00	$ 100.00	$ 100.00
$ 90,000.00	$ 90,000.00	$ 136,000.00	$ 136,000.00	$ 125,000.00	$ 125,000.00
$ 120,000.00	$ 120,000.00	$ 75,000.00	$ 75,000.00	$ 150,000.00	$ 150,000.00
$ 20,000.00	$ 20,000.00	$ 75,000.00	$ 75,000.00	$ 75,000.00	$ 75,000.00
$ 400.00	$ 144,000.00	$ 500.00	$ 180,000.00	$ 450.00	$ 162,000.00
$ 445.00	$ 258,100.00	$ 750.00	$ 435,000.00	$ 500.00	$ 290,000.00
$ 445.00	$ 129,050.00	$ 1,000.00	$ 290,000.00	$ 525.00	$ 152,250.00
$ 1,200.00	$ 15,600.00	$ 800.00	$ 10,400.00	$ 750.00	$ 9,750.00
$ 1,500.00	$ 30,000.00	$ 4,000.00	$ 80,000.00	$ 900.00	$ 18,000.00
$ 65,000.00	$ 65,000.00	$ 28,500.00	$ 28,500.00	$ 50,000.00	$ 50,000.00
$ 32,000.00	$ 64,000.00	$ 32,300.00	$ 64,600.00	$ 65,000.00	$ 130,000.00
$ 32,000.00	$ 32,000.00	$ 44,400.00	$ 44,400.00	$ 75,000.00	$ 75,000.00
$ 74,500.00	$ 149,000.00	$ 50,000.00	$ 100,000.00	$ 90,000.00	$ 180,000.00
$ 250.00	$ 762,500.00	$ 325.00	$ 991,250.00	$ 345.00	$ 1,052,250.00
$ 125,000.00	$ 125,000.00	$ 150,000.00	$ 150,000.00	$ 120,000.00	$ 120,000.00
$ 475,000.00	$ 475,000.00	$ 600,000.00	$ 600,000.00	$ 450,000.00	$ 450,000.00
$ 200,000.00	$ 200,000.00	$ 425,000.00	$ 425,000.00	$ 95,000.00	$ 95,000.00
$ 315,000.00	$ 630,000.00	$ 80,000.00	$ 160,000.00	$ 675,000.00	$ 1,350,000.00
$ 1,000.00	$ 42,000.00	$ 400.00	$ 16,800.00	$ 425.00	$ 17,850.00
$ 65,000.00	$ 65,000.00	$ 80,020.00	$ 80,020.00	$ 1,267.00	$ 1,267.00
$ 15,000.00	$ 15,000.00	$ 12,500.00	$ 12,500.00	$ 12,500.00	$ 12,500.00
$ 200.00	$ 10,000.00	$ 400.00	$ 20,000.00	$ 323.00	$ 16,150.00
$ 3,000.00	$ 3,000.00	$ 3,500.00	$ 3,500.00	$ 4,100.00	$ 4,100.00
$ 1,200.00	$ 3,600.00	$ 2,700.00	$ 8,100.00	$ 1,330.00	$ 3,990.00
$ 1,100.00	$ 1,100.00	$ 2,700.00	$ 2,700.00	$ 1,200.00	$ 1,200.00
$ 2,600.00	$ 2,600.00	$ 8,000.00	$ 8,000.00	$ 2,471.00	$ 2,471.00
$ 22,000.00	$ 22,000.00	$ 21,000.00	$ 21,000.00	$ 8,450.00	$ 8,450.00
$ 5,000.00	$ 5,000.00	$ 8,500.00	$ 8,500.00	$ 9,800.00	$ 9,800.00
$ 6,000.00	$ 18,000.00	$ 6,000.00	$ 18,000.00	$ 15,000.00	$ 45,000.00
$ 9,000.00	$ 18,000.00	$ 9,000.00	$ 18,000.00	$ 16,000.00	$ 32,000.00
$ 16,000.00	$ 48,000.00	$ 6,000.00	$ 18,000.00	$ 7,000.00	$ 21,000.00
$ 2,000.00	$ 20,000.00	$ 1,000.00	$ 10,000.00	$ 2,800.00	$ 28,000.00
$ 90.00	$ 18,000.00	$ 125.00	$ 25,000.00	$ 175.00	$ 35,000.00
$ 4,000.00	$ 4,000.00	$ 7,000.00	$ 7,000.00	$ 3,250.00	$ 3,250.00
$ 150.00	$ 15,000.00	$ 100.00	$ 10,000.00	$ 175.00	$ 17,500.00
$ 950.00	$ 13,300.00	$ 2,000.00	$ 28,000.00	$ 2,500.00	$ 35,000.00
$ 115,000.00	$ 115,000.00	$ 75,000.00	$ 75,000.00	$ 110,000.00	$ 110,000.00
$ 2,200.00	$ 4,400.00	$ 1,500.00	$ 3,000.00	$ 1,500.00	$ 3,000.00
$ 175.00	$ 4,550.00	$ 240.00	$ 6,240.00	$ 175.00	$ 4,550.00
$ 6.00	$ 43,800.00	$ 1.30	$ 9,490.00	$ 10.00	$ 73,000.00
$ 8,000.00	$ 8,000.00	$ 3,500.00	$ 3,500.00	$ 7,800.00	$ 7,800.00
$ 165.00	$ 3,300.00	$ 250.00	$ 5,000.00	$ 75.00	$ 1,500.00
$ 145,000.00	$ 145,000.00	$ 150,000.00	$ 150,000.00	$ 120,000.00	$ 120,000.00
$ 250,000.00	$ 250,000.00	$ 605,000.00	$ 605,000.00	$ 175,000.00	$ 175,000.00
$ 135,000.00	$ 135,000.00	$ 108,000.00	$ 108,000.00	$ 135,000.00	$ 135,000.00
$ 75,000.00	$ 75,000.00	$ 75,000.00	$ 75,000.00	$ 75,000.00	$ 75,000.00
	$ 4,457,000.00		**$ 5,525,500.00**		**$ 5,733,728.00**

Bidder Checklist

One (1) original hardcopy completed on the Bid Packet as furnished with one (1) electronic copy using a CD or USB drive. Following items must be included with submittal for Bid to be considered responsive.

- ☒ Bidder's Checklist & Addendum Acknowledgements – **Page 4**
- ☒ Bid Form and Price Proposal Form – **Page 89**
- ☒ Bid Bond ON BID BOND FORM PROVIDED – **Page 95**
- ☒ Certificate as to Corporate Principal – **Page 96**
- ☒ Affidavit – **Page 99**
- ☒ Subcontractor list – **Page 100**
- ☒ Questionnaire Form (including References) - **Page 101**
- ☒ Trench Safety – **Page 103**
- ☒ Public Entity Crimes - **Page 105**
- ☒ Scrutinized Companies Certificate: Pursuant to Florida Statute § 287.135 – **Page 109**
- ☒ E-Ver0ify Affidavit E-Verify # 1703808 **Page 111**
- ☒ Drug Free Workplace Certification – **Page 112**
- ☒ Certification Regarding Debarment Suspension, Ineligibility,Voluntary Exclusion – **Page 113**
- ☒ Equal Employment Opportunity Certification – **Page 114**
- ☒ Form of Non-Collusion Affidavit – **Page 115**
- ☒ Disclosure Form Foreign Influence _ **Page 116**
- ☐ **nfirmed not needed** DEP Contract Certification Form _ **Attachment A**
- ☐ **nfirmed not needed** Coronavirus State and Local Fiscal Recovery Funds Special Provisions **Attachment 8**

Addendum Acknowledgment - Bidder acknowledges that the following addenda have been received and are included in this Bid:

☒ Addendum 1 1 Dated 11/26/25

☒ Addendum 1 2 Dated 12/9/25

☒ Addendum 1 3 Dated 12/23/25

Proof that your firm is licensed to perform this work, proof of insurance, and all completed Required Forms within this packet must be included with this bid for your bid to be considered.

PLEASE COMPLETE AND SUBMIT WITH BID

BID PRICE PROPOSAL
(Bid Form)

Project Identification: **Replacement of Seminole Lift Station & Demolition of Bayview Lift Station**

Project Bid No.: **26B004LR**

TO: CITY OF TITUSVILLE:

In accordance with your advertisement inviting bids to be received at City Hall Purchasing & Contracting Division, 555 South Washington Avenue, Titusville, Florida, 32796 this Bid Proposal is submitted for the above captioned project.

NAME OF BIDDER: AMCON Development Group LLC	DATE: 1/5/26
BUSINESS ADDRESS: 1170 Tree Swallow Drive #337 Winter Springs, FL 32708	
PHONE NUMBER: 407-376-6571	FAX NUMBER:
EMAIL ADDRESS: zach@amconpro.com	
BIDDER'S SIGNATURE & TITLE: Zach Amkraut/Manager	
CONTRACTOR'S FLORIDA LICENSE NUMBER (S): CGC1527224	
CITY OF TITUSVILLE BUSINESS TAX RECEIPT NUMBER: N/A	
FEID # 83-1350772	**SAMS REGISTRATION #** ML1BJFKGVU9

BIDDER DECLARATION/ACKNOWLEDGEMENT

THIS BID IS SUBMITTED TO THE CITY OF TITUSVILLE (AKA – OWNER):

1. The undersigned Bidder proposes and agrees, if this bid is accepted, to enter into an Agreement with the City, in the form provided herein, to perform and furnish all Work specified or indicated in the Contract Documents for the Contract Price and within the Contract Time indicated in this Bid Form and the Agreement, and in accordance with the other terms and condition of the Contract Documents and Instructions to Bidders made a binding part of this bid.

2. Bidder accepts all of the terms of the Bidding Documents including without limitation those addressing the disposition of the Bid Bond.

3. This bid will remain open for a period of ninety (90) consecutive calendar days after the date of the bid opening.

4. In submitting this Bid, the Bidder further represents and warrants as follows:
   a. Bidder has familiarized itself with the nature and extent of the Contract Documents, Work, site conditions, locality, all applicable laws, regulations, jurisdictions, etc., which may affect cost, progress of the Work, performance or furnishing of necessary materials for the Work.
   b. Bidder has carefully studied all reports of explorations and tests of subsurface conditions at or contiguous to the site and all drawings of physical conditions in or relating to existing surface of subsurface structures at or contiguous to the site (except Underground facilities) which have been identified in the supplementary conditions as provided for herein. BIDDER accepts determinations set forth hereby to the extent that "technical data" contained in such reports and drawings upon which BIDDER is entitled to rely as limited by the provisions associated with the data. BIDDER acknowledges that such reports and drawings are not Contract Documents and may not be complete for BIDDER'S purposes. BIDDER acknowledges that OWNER does not assume responsibility for the accuracy or completeness of information and data shown or indicated in the Bidding Documents with respect to Underground Facilities at or contiguous to the site.
   c. BIDDER has obtained and carefully studied (or assumes responsibility for having done so) all such additional or supplementary examinations, investigations, explorations, tests, studies and data concerning conditions (surface, subsurface and underground facilities) at or contiguous to the site or otherwise which may affect cost progress, performance or furnishing of the Work or which relate to any aspect of the means, methods, techniques, sequences and procedures of construction to be employed by BIDDER and safety precautions and program incident thereto. BIDDER does not consider that any additional examinations, investigations, explorations, tests, studies or data are necessary for the determination of this Bid for performance and furnishing of the Work in accordance with the times, price and other terms and conditions of the Contract Documents.
   d. BIDDER is aware of the general nature of Work to be performed by OWNER and others at the site that relates to Work for which this Bid is submitted as indicated in the Contract Documents.
   e. BIDDER has correlated the information known to BIDDER, information and observations obtained from visits to the site, reports and drawings identified in the Contract Documents and all additional examinations, investigations, explorations, tests, studies and date with the Contract Documents.
   f. BIDDER has given OWNER written notice of all conflicts, errors, ambiguities or discrepancies that BIDDER has discovered in the Contract Documents and the written resolution thereof by CITY is acceptable to BIDDER, and the Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performing and furnishing the Work for which this Bid is submitted.
   g. This Bid is genuine and not made in the interest of or on behalf of any undisclosed person, firm or corporation and is not submitted in conformity with any agreement or rules of any group, association, organization or corporation; BIDDER has not directly or

indirectly induced or solicited any other Bidder to submit a farce or sham Bid; BIDDER has not solicited or induced any person, firm, or corporation to refrain from bidding; and BIDDER has not sought by collusion to obtain for itself any advantage over any other Bidder or over OWNER.

h. BIDDER hereby agrees to commence WORK under this contract on or before a date to be specified in the NOTICE TO PROCEED and to fully complete all work of the PROJECT within the Contract Time specified in the Construction Contract. BIDDER further accepts the provisions of the Construction Contract as to liquidated damages and agrees to pay as liquidated damages the amount stated in the Construction Contract and General Conditions, for each consecutive calendar day completion of the Work is delayed.

Completion Schedule

1) The Project shall be complete in ___ **consecutive calendar days** from the official Notice to Proceed.

5. All bid items shall include all materials, equipment, labor, permit fees, taxes, tests, miscellaneous costs of all types, overhead, and profit for the item to be complete, in place, and ready for operation in the manner contemplated by the Contract Documents.

6. In accordance with Instructions to Bidders, if the Contract is to be awarded, it will be awarded on the basis of the lowest "Total Base Bid" after adjustments for additive or deductive alternates. Additive or deductive alternates (if any) will be considered in determining the lowest responsive, responsible Bidder. The OWNER reserves the right to accept any or all additive or deductive alternates, in his sole discretion, prior to the award of the Contract. The OWNER also reserves the right to delete any portion of the Work as shown in the bid schedule prior to award and adjust each bidder's "Total Bid" accordingly.

7. The documents are attached to and made a condition of this Bid. PLEASE NOTE YOUR ACKNOWLEDGEMENT BY INITIALING IN SPACE PROVIDED ON PAGE 2 BID CHECKLIST.

Having carefully examined the Bid Documents, comprised of the plans, specifications, and all other documents bound herewith and or referenced hereby, any addenda or bulletin as prepared or sanctioned by the City and being familiar with the various conditions affecting the work, the Bidder proposes and agrees, if this Proposal is accepted, to execute all appropriate Contract Documents for the purpose of establishing a formal contractual relationship between him and the City, for the furnishing of all materials and the performance of all Work to which this bid proposal pertains and for which the following total bid is submitted:

REVISED SCHEDULE OF BID FORM FOR

Replacement of Seminole Lift Station & Demolition of Bayview Lift Station

Bid #26B004 LR – Per Addendum 3

BASE BID ITEMS					
Item No.	Description	No. of Units	Units	Unit Price	Subtotal
GENERAL					
1	Bonds and Insurance	1	LS	$ 103,413.00	$ 103,413.00
2	Indemnification	1	LS	$ 136.00	$ 136.00
3	Mobilization and Demobilization (Not greater than 2.5% of Base Bid)	1	LS	$ 95,989.00	$ 95,989.00
4	Maintenance of Traffic	1	LS	$ 64,875.00	$ 64,875.00
5	Erosion and Sedimentation Control	1	LS	$ 19,338.00	$ 19,338.00
CIVIL					
	Gravity Sewer				
6	12-inch PVC Gravity Sewer Piping 0-8 Feet Deep	360	LF	$ 342.31	$ 123,231.60
7	12-inch PVC Gravity Sewer Piping 8-10 Feet Deep	580	LF	$ 347.49	$ 201,542.00
8	12-inch PVC Gravity Sewer Piping 10-12 Feet Deep	290	LF	$ 457.07	$ 132,550.30
9	10-inch PVC Gravity Sewer Piping	13	LF	$ 576.00	$ 7,488.00
10	12-inch DR-18 Gravity Sewer Piping	20	LF	$ 414.90	$ 8,298.00
11	Sewer Manhole 7 Feet Deep	1	EA	$ 53,366.00	$ 53,366.00
12	Sewer Manhole 9 Feet Deep	2	EA	$ 51,588.00	$ 103,176.00
13	Sewer Manhole 10.5 Feet Deep	1	EA	$ 52,371.00	$ 52,371.00
14	Sewer Manhole 11.5 Feet Deep	2	EA	$ 58,120.00	$ 116,240.00
15	Pavement	3,050	SY	$ 267.75	$ 816,637.50
	Bayview Lift Station				
16	Demolition of Bayview Lift Station	1	LS	$ 142,877.00	$ 142,877.00
	Seminole Lift Station				
17	Construct Precast Wet Well	1	LS	$ 467,744.00	$ 467,744.00
18	Construct Lift Station and All Associated Appurtenances	1	LS	$ 548,717.00	$ 548,717.00
19	Submersible Pump	2	EA	$ 60,965.50	$ 121,931.00
20	8-inch DIP Force Main (wet well)	42	LF	$ 379.24	$ 15,928.08
21	8-inch DIP Force Main and Fittings (above ground)	1	LF	$ 45,826.00	$ 45,826.00
22	8-inch Magnetic Flow Meter	1	EA	$ 20,817.00	$ 20,817.00
23	8-inch DIP Force Main (buried RJ)	50	LF	$ 374.74	$ 18,737.00
24	8-inch DIP Tee	1	EA	$ 2,331.00	$ 2,331.00
25	8-inch DIP 90 degree bend (buried RJ)	3	EA	$ 1,947.00	$ 5,841.00
26	8-inch DIP 45 degree bend (buried RJ)	1	EA	$ 1,837.00	$ 1,837.00
27	8-inch Gate Valve	1	EA	$ 5,663.00	$ 5,663.00

28	8-inch Tapping Sleeve and Valve	1	EA	$ 22,412.00	$22,412.00
29	8-inch DIP Emergency Pump-out Connection	1	LS	$8,493.00	$8,493.00
30	8-inch Plug Valve	3	EA	$ 7,100.00	$21,300.00
31	8-inch Check Valve	2	EA	$6,699.00	$ 13,398.00
~~**32**~~	~~8-inch Tapping Sleeve and Valve~~	~~1~~	~~EA~~	$N/A	$ N/A
33	Air Release Valve	3	EA	$8,375.67	$ 25,127.01
~~**34**~~	~~Pressure Regulating Valve~~	~~2~~	~~EA~~	$ N/A	$ N/A
35	Pipe Support	10	EA	$ 803.30	$ 8,033.00
36	Fence	200	LF	$ 113.07	$ 22,614.00
37	Gate	1	EA	$2,646.00	$ 2,646.00
38	Concrete Driveway, Walkways, Pads	100	SY	$ 340.14	$ 34,014.00
39	Generator Pad	14	CY	$ 1,328.36	$ 18,597.04
40	Retaining Walls	1	LS	$ 90,550.00	$ 90,550.00
41	Bollards	2	EA	$ 1,425.00	$ 2,850.00
42	Guardrail	26	LF	$ 109.85	$ 2,856.10
43	Sod	7300	SF	$ 1.70	$12,410.00
44	Relocate Water Service, Backflow, and Hose Bib	1	LS	$3,549.00	$ 3,549.00
45	Restore Curb and Gutter	20	LF	$72.65	$ 1,453.00
46	Demolition of Seminole Lift Station	1	LS	$90,959.00	$90,959.00
ELECTRICAL					
47	Construct Electrical Equipment	1	LS	$264,497.00	$264,497.00
48	Standby Generator	1	LS	$118,114.00	$ 118,114.00
49	FPL Allowance	1	NA	$75,000	$75,000
TOTAL BID PRICE					$4,135,772.63 -

Bidder proposes to do the Work for the above Bid for (words)

Four Million, One Hundred Thirty-five Thousand, Seven Hundred
Seventy-two dollars and Sixty-three Cents

($ 4,135,772.63).

THE ABOVE BID QUANTITIES ARE THE CITY'S ESTIMATED REQUIREMENTS AND WILL BE USED SOLELY FOR BID EVALUATION AND CONTRACT AWARD PURPOSES. THESE QUANTITIES DO NOT CONSTITUTE A GUARANTEE OF WORK OR INTENT THEREOF. THE CITY DOES NOT REPRESENT THAT THE ACTUAL QUANTITIES OF WORK PERFORMED WILL CORRESPOND WITH THE ABOVE BID QUANTITIES. FURTHERMORE, THE CONTRACTOR SHALL NOT PLEAD MISUNDERSTANDING OR DECEPTION BECAUSE OF QUANTITIES OR OF THE CHARACTER, LOCATION OR OTHER CONDITIONS PERTAINING TO THE WORK.

CONTRACTOR AGREES THAT PAYMENTS, FOR SATISFACTORY WORK PERFORMED, WILL BE BASED ON THE ACTUAL QUANTITIES OF WORK INSTALLED, AND THE ACTUAL QUANTITIES MAY BE GREATER THAN OR LESS THAN THE ABOVE BID QUANTITIES.

CONTRACTOR'S BID PRICES SHALL INCLUDE ALL SUPERVISION, LABOR, MATERIALS, EQUIPMENT, TOOLS, TRANSPORTATION, ADMINISTRATION, OVERHEAD AND PROFIT, AND ANY OTHER INCIDENTALS REQUIRED TO COMPLETE THE WORK TO THE CITY'S SATISFACTION AND READY FOR USE. NO SEPARATE PAYMENT WILL BE MADE FOR ANY OTHER ITEMS, REQUIRED TO BE

PERFORMED BY THE CONTRACTOR TO COMPLETE THE WORK, WHICH ARE NOT CONTAINED IN THE ABOVE BID SCHEDULE. ACCORDINGLY, THE CONTRACTOR MUST INCLUDE ALL THE COSTS, FOR THE WORK AND THE SERVICES REQUIRED TO BE PERFORMED OR PROVIDED BY THE CONTRACTOR, IN THE CONTRACTOR'S BID PRICES FOR THE PAY ITEMS CONTAINED ABOVE.

THE FOLLOWING ITEMS AND THE COST OF SUCH WORK ARE SOME EXAMPLES OF WORK FOR WHICH NO PAY ITEMS HAVE BEEN ESTABLISHED AND CONSEQUENTLY THE CONTRACTOR MUST INCLUDE SUCH COSTS IN THE ABOVE BID ITEMS:

1. Maintaining and supporting existing above ground and below ground utility structures,
2. All other General Conditions including insurance, bonding, providing proper safety and sanitary facilities for workers, etc.
3. Any other required work or service not included in the Schedule of Bid Items.

The City reserves the right to award the contract to either the firm that submits the lowest "Bid Total Price" or the firm that submits the lowest bid price resulting from adding unit prices, provided that said bid is both responsive and responsible.

COMPANY NAME AND ADDRESS:	PHONE # 407-376-6571
AMCON Development Group LLC 1170 Tree Swallow Drive #337 Winter Springs, FL 32708	FAX #_____ E-MAIL: zach@amconpro.com FEIN # 83-1350772 DUNS# 81328852 SAMS # ML1BJFKGVU95
AUTHORIZED SIGNATURE: _____ PRINTED SIGNATURE: Zacharie Amkraut TITLE: Manager	
DATE SIGNED: 1/5/26	

BID SECURITY

Accompanying this Proposal is a five percent (5%) **(circle one)** Certified Check, Bid Bond, Cashier's Check in the amount of Dollars ($ of total bid) as bid security.

*Use City Bond Form

PLEASE COMPLETE AND SUBMIT WITH BID

STATE OF FLORIDA)
COUNTY OF BREVARD)
CITY OF TITUSVILLE)

BID BOND

KNOW ALL MEN BY THESE PRESENTS, that AMCON Development Group, LLC as Principal, and First Indemnity of America Insurance Company as Surety, are held and firmly bound unto the City of Titusville, in the penal sum of -- FIVE PERCENT (5%) OF PROPOSED BID -- (Dollars) ($ ---5%---), lawful money of the United States of America, for the payment of which sum well and truly be made, we bid ourselves, our heirs, executors, administrators, and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas the Principal has submitted the accompanying bid dated ~~December 9, 2025~~ January 7, 2026, for:

REPLACEMENT OF SEMINOLE LIFT STATION AND DEMOLITION OF BAYVIEW LIFT STATION-CN26-B-004/LR

NOW THEREFORE,

(a) The principal shall not withdraw said bid within ninety (90) days after date of opening the same, and shall within twenty (20) days after the prescribed forms are presented to him for signature, enter into a written contract with the City, in accordance with the proposal as accepted, and five bonds with good and sufficient surety or sureties, as required, for the faithful performance and proper fulfillment of such contract: and,

(b) In the event of the withdrawal of said bid within the period specified, or the failure to enter into such contract and give bond within the time specified, if the principal shall pay the City the difference between the amount specified in said bid and the amount for which the City may procure the required work and supplies, if the latter amount be in excess of the former, then the above obligation shall be void and of no effect, other wise to remain in full force and virtue.

IN WITNESS WHEREOF, the above-bounded parties have executed this instrument under their several seals, this 9th day of December, 2025, the name and corporate seal of each corporate party being hereto affixed, and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

WITNESS:
If Sole Ownership or Partnership, one (1) Witness is required. If Corporation, Secretary only will attest & affix seal.)

Surety Secretary

PRINCIPAL:

AMCON Development Group, LLC
(Name of Firm)

Affix Seal

(Signature of Authorized Officer)

Manager
(Title)

249 Morton Lane
(Business Address)

Winter Springs, FL 32708
(City) (State) (zip)

SURETY:

First Indemnity of America Insurance Company
(Corporate Surety)

Affix Seal

(Signature of Authorized Officer)

Kevin Wojtowicz, Attorney-In-Fact &
Florida Resident Agent - Inquiries: 407 330 3990
(Title)

2740 State Rte 10, Suite 205
(Business Address)
Morris Plains, NJ 07950
(City) (State) (zip)

ACRISURE
(Name of Local Insurance Agency)

4380 St. Johns Pkwy., Suite 110
Sanford, Florida 32771
(Address)

The rate of premium on this bond is N/A per thousand.

Total amount of premium charges N/A.

(The above must be filled in by Corporate Surety.)

FIRST INDEMNITY OF AMERICA
INSURANCE COMPANY

2740 Route 10 West, Suite 205, Morris Plains, N.J. 07950
Telephone: (973) 402-1200

POWER OF ATTORNEY FOR BONDS AND UNDERTAKINGS

Know All Men By These Presents: That First Indemnity of America Insurance Company, a Corporation of the State of New Jersey does hereby appoint: Brett Rosenhaus, Charles D. Nielson, Charles J. Nielson, Christian Collins, Eduardo Menendez, Ian Nipper, Jarrett Merlucci, Jessica Reno, Joseph Nielson, Kevin Wojtowicz, Robert Benson, Shawn Burton, William Parker, Michael Moyer, its true and lawful Attorneys-in-Fact: to make, execute, sign, acknowledge, affix the Company Seal to, deliver any and all surety bonds, undertakings, recognizances, and other contracts of indemnity and writings obligatory in the nature of a bond, for and on behalf of said Company and as an act and deed of said Company, NOT TO EXCEED SIX MILLION DOLLARS FOR ANY BOND OR CONTRACT PRICE.

IN WITNESS WHEREOF, First Indemnity of America Insurance Company of the State of New Jersey has executed these presents this 25th day of November, 2019.

FIRST INDEMNITY OF AMERICA INSURANCE COMPANY INCORPORATED 1978 NEW JERSEY

Patrick J. Lynch, President

STATE OF NEW JERSEY)
COUNTY OF MORRIS) ss:

On this 25th day of November, 2019, before me came the above named officer of First Indemnity of America Insurance Company of New Jersey, to me personally known to be the individual and officer described herein, and acknowledge that he executed the foregoing instrument and affixed the seal of said corporation thereto by authority of this office.

KATHLEEN FOCHESTO NOTARY PUBLIC NEW JERSEY

Kathleen Fochesto

KATHLEEN FOCHESTO
Commission # 2394310
Notary Public, State of New Jersey
My Commission Expires
March 16, 2030

CERTIFICATE

Excerpts of Resolutions (Article V, Paragraph 5, of the By-Laws of said Company) adopted by the Board of Directors of the First Indemnity of America Insurance Company of the State of New Jersey, November 25, 2019.

RESOLVED, on November 25, 2019, that the President, or any one of the Vice Presidents specially authorized to do so by the Board of Directors, or by the Executive Committee, shall have power to appoint Attorneys-in-Fact as the business of the company may require, or to authorize any person or persons to execute on behalf of the Company any bonds, undertakings, recognizances, stipulations, policies, contracts, agreements, deeds, and release and assignment of judgments, decrees, mortgages and instruments in the nature of mortgages, and also all other instruments and documents which the business of the Company may require and to affix the Seal of the Company thereto.

FURTHER RESOLVED, that the signatures and attestations of such officers and the seal of the Company may be affixed to any such Power of Attorney or to any certificate relating to the Power of Attorney by facsimile and any such Power of Attorney or certificate bearing such facsimile signatures or facsimile seal shall be valid and binding upon the Company with respect to any bond, undertaking, recognizances or other contract of indemnity of writing obligatory in the nature thereof.

I, Jane E. Lynch, Secretary of First Indemnity of America Insurance Company of New Jersey, do hereby certify that the foregoing excerpts of the Resolution adopted by the Board of Directors of the Corporation and the Powers of Attorney issued pursuant thereto, are true and correct and that both the Resolution and the Powers of Attorney are in full force and effect.

IN WITNESS WHEREOF, I have herewith set my hand and affixed the seal of said Corporation this 9th day of December, 2025.

FIRST INDEMNITY OF AMERICA INSURANCE COMPANY INCORPORATED 1978 NEW JERSEY

FIRST INDEMNITY OF AMERICA INSURANCE COMPANY CORPORATE SEAL 1978 NEW JERSEY

Jane E. Lynch, Secretary

FP0027219

SECURITY FEATURES:	
Hologram	• Multi-dimensional foil seal fused to stock. Cannot be photocopied.
Chemical Sensitive Paper	• Stains or discoloration on this document may indicate alteration attempt.
Microprinting	• Small type on document appears as dotted line when copied.
True Watermark	• Hold document to a light source to view. Cannot be copied.
Heat Sensitive Ink	• Hold image between thumb and forefinger or breathe on it. The image will fade and reappear.
VOID Technology	• When photocopied, the word "VOID" appears prominently across the face of the document.

PLEASE COMPLETE AND SUBMIT WITH BID

CERTIFICATES AS TO CORPORATE PRINCIPAL

I, Celia Amkraut, certify that I am the Secretary of the Corporation named as Principal in the within bond, that Zacharie Amkraut who signed the said bond on behalf of AMCON Development Group LLC the principal, was then Manager of said corporation; that I know his signature, and his signature hereto is genuine; and that said bond was duly signed, sealed, and attested for and on behalf of said corporation by authority of its governing body.

(Corporate Seal)
Secretary

STATE OF FLORIDA)
COUNTY OF BREVARD)
CITY OF TITUSVILLE)

Before me, a Notary Public duly commissioned, qualified and acting, personally appeared: Zacharie Amkraut to me well known, who being by me first duly sworn upon oath, says that he is the attorney-in-fact for the AMCON Development Group LLC, and that he has been authorized by AMCON Development Group LLC to execute the foregoing bond on behalf of the Contractor named therein in favor of the City of Titusville, Florida.

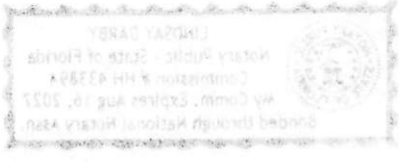
Subscribed and sworn to before me this 5th day of January, 2026,

INSTRUCTIONS: Bid Bonds must be accompanied by an affidavit and a Power of Attorney, in compliance with Instructions to Bidders.

Lindsay Darby
Notary Public

08/16/27
My Commission Expires

LINDSAY DARBY
Notary Public - State of Florida
Commission # HH 433894
My Comm. Expires Aug 16, 2027
Bonded through National Notary Assn.



PLEASE COMPLETE AND SUBMIT WITH BID

CERTIFICATE

I HEREBY CERTIFY that a meeting of the Board of directors of AMCON Development Group LLC, corporation under the laws of the State of Florida held on the 5th day of Jan, the following resolution was duly passed and adopted:

"RESOLVED, that Zacharie Amkraut, as Manager (title) of the corporation, is hereby authorized to execute the contract 5th day of January, 2026, between the CITY OF TITUSVILLE, a municipal corporation, and this corporation, and that his execution thereof, attested by the Secretary of the corporation and with corporate seal affixed shall be the official act and deed of this corporation."

I FURTHER CERTIFY that said resolution is now in full force and effect.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the official seal of the corporation this 5th day of January, 2026.

Secretary

Notary Public Information

STATE OF Floirda

COUNTY OF Seminole

The foregoing instrument was acknowledged before me by means of ☒ physical presence or ☐ online notarization, this 5th day of January, 2026, by Zacharie Amkraut.
(year) (name of person acknowledging).

Lindsay Darby
(Print, Type, or Stamp Commissioned Name of Notary Public)

Lindsay Darby
(Signature of Notary Public)

Personally Known X OR Produced Identification _____

Type of Identification Produced DL

LINDSAY DARBY
Notary Public - State of Florida
Commission # HH 433894
My Comm. Expires Aug 16, 2027
Bonded through National Notary Assn.

PLEASE COMPLETE AND SUBMIT WITH BID

STATE OF FLORIDA)
COUNTY OF BREVARD)
CITY OF TITUSVILLE)

AFFIDAVIT

Before me, the undersigned authority, personally appeared Zacharie Amkraut

who, first being duly sworn, upon his oath deposes and says:

That he is the (contractor) (sub-contractor) on the following described public works:

JOB DESCRIPTION: REPLACEMENT OF SEMINOLE LIFT STATION AND DEMOLITION OF BAYVIEW LIFT STATION
CONTRACTOR (SUBCONTRACTOR): AMCON Development Group LLC

ADDRESS:

1170 Tree Swallow Drive #337 Winter Springs, FL 32708

CONTRACTING AUTHORITY: City of Titusville
PREVAILING WAGE DETERMINATION NO.: (as applicable) _____

AND FURTHER AFFIANT SAYETH NOT.

Sworn to and subscribed before me this 5th day of January, 2026.

LINDSAY DARBY
Notary Public - State of Florida
Commission # HH 433894
My Comm. Expires Aug 16, 2027
Bonded through National Notary Assn.

Lindsay Darby
Notary Public, State of FL at Large

08/16/27
My Commission Expires

The contractor shall execute and mail this affidavit to the Florida Department of Commerce, Bureau of Workers' Compensation, Ashley Building, 1321 Executive Center Drive, East, Tallahassee, FL 32301, within ten (10) days of the commencement of work. Copies should be forwarded to the office of the Purchasing & Contracting Administrator.

PLEASE COMPLETE AND SUBMIT WITH BID

PERFORMANCE OF WORK BY SUBCONTRACTORS

The BIDDER hereby states that he proposes, if awarded the Contract, to use the following subcontractors on this project: List below all proposed subcontractors and trade specialties and costs. (List only one subcontractor for each item.) Write on back or provide additional pages if additional space is needed.

NAME OF SUBCONTRACTOR	TRADE OF SUBCONTRACTOR	COST OF WORK
Giles Electric	Electric	$184,700.00
CFCW	Concrete	$351,308.00
JMK Grading	Demo/Sitework	$504,419.00
Rangeline Tapping	Wet Tap	$6,048.00
Danus Utilities	Tremie Well Install	$167,428.00
	TOTAL:	$1,213,903.00

PLEASE COMPLETE AND SUBMIT WITH BID

REFERENCE FORM BIDDER QUALIFICATION QUESTIONNAIRE

Submitted by AMCON Development Group LLC
Name of Bidder

Contractor's License # CGC1527224
( ) An Individual ( ) A Partnership (X) A Corporation

Federal Identification # 83-1350772

Principal Office Address: 1170 Tree Swallow Drive #337
Winter Springs, FL 32708

City of Titusville □Yes or ☒No: Other (City/County/Etc.) Winter Springs/Seminole County

Please answer the following:

1. Number of years your firm/company has been in business under present name: 8 years.
2. Is your company incorporated in the State of Florida? X Yes _____ No
3. Headquarter address if different from business address _____
4. How many years' experience in fuel site new and/or tank replacement projects similar in scope and size has your organization had

   As a Contractor? 8 Years As a Subcontractor? _____ years
5. List below (minimum 3/maximum 5) the requested information concerning projects your organization demonstrating years of experience for completed lift station replacement projects. (Use additional sheets if necessary). Include the type of work similar to the work included in this contract if possible.

(A) Business/Organization (Nam): City of Orlando

Address: 400 S Orange Avenue Orlando, FL 32801

Contact Person (Name): Vinnie Fernandez Telephone: (407)-448-1333

Fax and/or Email: vinnie.fernandez@orlando.gov

Date of Service: 11/2022-1/2025 Contract Total: $3,853,284.59

Description of Service: TREMIE INSTALLATION OF (2) NEW WET WELLS, INSTALLATION OF (2) NEW TERMINAL MANHOLES, NEW PUMPS, PIPING, SWITCHGEAR, CONTROLS & GENERATORS FOR (4) LIFT STATIONS

(B) Business/Organization (Name): City of Orlando

Address: 400 S Orange Avenue Orlando, FL 32801

Contact Person (Name): Mike Vinson Telephone: Mike Vinson

Fax and/or Email: michael.vinson@orlando.gov

Date of Service: 10/2024 Contract Total: $1,812,900.07

Description of Service: INSTALLATION/REHABILIATION OF PRECAST WET WELLS, INSTALLATION OF NEW PUMPS, PIPING, SWITCHGEAR, CONTROL PANELS & SITEWORK FOR (6) LIFT STATIONS.

(C) Business/Organization (Name): City of Daytona Beach

Address: 125 Basin Street, Suite 131 Daytona Beach, FL 32114

Contact Person (Name): Frank O'Keefe Telephone: (386) 671-8886

Fax and/or Email: okeefefrank@codb.us

Date of Service: 11/2025 Contract Total: $950,831.71

Description of Service: INSTALLATION OF NEW PRECAST WET WELL, REPLACE SANITARY SEWER PIPING FEEDING LIFT STATION, NEW PUMPS, PIPING, SWITCHGEAR, CONTROLS, GENERATOR, & SITEWORK.

(D) Business/Organization (Name): City of Orlando

Address: 400 S Orange Avenue Orlando, FL 32801

Contact Person (Name): Greg Sharp Telephone: 321-229-0278

Fax and/or Email: gregory.sharp@orlando.gov

Date of Service: 01/2025 Contract Total: $1,772,646.93

Description of Service: INSTALLATION OF (5) NEW WALK-IN, SOUND ATTENUATED ENCLOSED GENERATORS INCLUDING FUEL TANKS, DAY TANKS & FUEL PIPING, NEW ATS'S, SWITCHGEAR, & SCADA INTEGRATION.

(E) Business/Organization (Name):

Address:

Contact Person (Name): Telephone:

Fax and/or Email:

Date of Service: Contract Total:

Description of Service:

6. Have you ever failed to complete any work awarded to you? If so, where, and why?
No

7. Give below any information which would indicate the size and capacity of your organization, including number of employees, equipment owned by your organization, etc., which are available for utilization on this Contract. CORE EMPLOYEES AVAILABLE FOR T HIS PROJECT: 4 - 9, BOND CAPACITY

CORE EQUIPMENT UTILIZED FOR THIS PROJECT: LOADER, SKID STEERS, MINI EXCAVATORS, DUMP TRUCKS, DEMOLITION EQUIPMENT, FUELING EQUIPMENT
BONDING CAPACITY: $7.5M SINGLE / $15M AGGREGATE

I, the undersigned, do hereby declare that the foregoing statements are true and correct, all as of the date hereinafter set forth, and that those examining this document have my permission to contact any or all of those parties listed in this questionnaire. Incorrect or misleading statements in this questionnaire shall be grounds for a determination of non-responsibility with respect to such contractor.

(SIGNATURE OF BIDDER)

AMCON Development Group LLC
(TYPE OR PRINT COMPANY NAME)

1170 Tree Swallow Drive #337 Winter Springs, FL 32708
(TYPE OR PRINT ADDRESS)

PLEASE COMPLETE AND SUBMIT WITH BID

FLORIDA TRENCH SAFETY ACT
CERTIFICATION AND DISCLOSURE STATEMENT

The undersigned acknowledges the requirements of the Florida Trench Safety Act., F.S., (Section 553.60 et. seq. Florida statutes), and hereby commits the Bidder to the following in the performance of the work in the event that the subject contract is awarded to and executed by said Bidder.

1. The Bidder further acknowledges that the Florida Trench Safety Act, (the Act) establishes the Federal excavation safety standards set forth at 29 CFR Part 1926, Subpart P as the Interim State Standard until such time as the State of Florida, through its Department of Labor and Employment Security, or any successor agency, adopts, updates or revises said interim standard. This State of Florida standard may be supplemented by special shoring requirements established by the State of Florida or any of its political subdivisions.

2. The Bidder, as Contractor, shall comply with all applicable excavation/trench safety standards.

3. The Contractor shall consider the geotechnical data available from the City, if any, the Contractor's own sources, and all other relevant information in providing the trench safety system to be employed on the subject Project. The Contractor acknowledges sole responsibility for the selection of the data on which he relies in providing the safety system, as well as for the system itself.

4. The amounts that the Bidder has set forth for pipe installation includes the following excavation / trench safety measures and the linear feet of trench excavated under each safety measure. These units, costs, and unit prices shall be disclosed solely for the purpose of compliance with procedural requirements of the Act. No adjustment to the Contract time or price shall be made for any difference in the actual number of linear feet of trench excavation, except as may be otherwise provided in these Contract Documents.

Trench Safety Measure (Description)	Units of Measure (LF, SF)	Unit (Quantity)	Unit Cost	Extended Cost
a. Benching/Sloping	LS	1	$55,349.00	$55,349.00
b.				
c.				
d.				
e.				

For Information Only, Not for Payment Purposes $
Bidder may use additional sheets as necessary to extend this form.
Failure to complete the above may result in the bid being declared non-responsive.

5. The amount disclosed is the cost of compliance with the applicable trench safety requirements does not constitute the extent of the Contractor's obligation to comply with said standards. Contractor shall expend additional sums at no additional cost to the County, if necessary, to comply with the Act (except as may otherwise be provided).

6. Acceptance of the bid to which this certification and disclosure applies in no way represents that the County or its representative has evaluated and thereby determined that the above costs are adequate to comply with the applicable trench safety requirements nor does it in any way relieve the Contractor of its sole responsibility to comply with the applicable trench safety requirements.

AMCON Development Group LLC
Company

Zacharie Amkraut/Manager
Name and Title

Address:

1170 Tree Swallow Drive #337

Winter Springs, FL 32708

Telephone:(407)376-6571

END OF FLORIDA TRENCH SAFETY ACT STATEMENT

PLEASE COMPLETE AND SUBMIT WITH BID

PUBLIC ENTITY CRIMES

Any person submitting a bid, Bid or reply in response to this invitation or a contract, must execute the enclosed form PUR. 7069, sworn statement under section 287.133(3)(a), FLORIDA STATUTES, ON PUBLIC ENTITY CRIMES, including proper check(s), in the space(s) provided, and enclose it with his quote, bid, or proposal. If you are submitting a quote, bid or proposal on behalf of dealers or suppliers who will ship commodities and receive payment from the resulting contract, it is your responsibility to see that copy(ies) of the form are executed by them and are included with your quote, bid, or proposal. Corrections to the form will not be allowed after the quote, bid, or Bid opening time and date. Failure to complete this form in every detail and submit it with your quote, bid, or Bid may result in immediate disqualification of your bid or proposal.

The 1989 Florida Legislature passed Senate Bill 458 creating Sections 287.132 - 133, Florida Statutes, effective July 1, 1989. Section 287.132(3)(d), Florida Statutes, requires the Florida Department of General Services to maintain and make available to other political entities a "convicted vendor" list consisting of persons and affiliates who are disqualified from public contracting and purchasing process because they have been found guilty of a public entity crime. A public entity crime is described by Section 287.133, Florida Statutes, as a violation of any State or Federal law by a person with respect to and directly related to the transaction of business with any public entity in Florida or with an agency or political subdivision of any other state or with the United States, including, but not limited to, any bid or contract for goods or services to be provided to any public entity or with an agency or political subdivision and involving antitrust, fraud, theft, bribery, collusion, racketeering, conspiracy, or material misrepresentation.

A public entity may not accept any bid, Bid or reply from, award any contract to, or transact any business in excess of the threshold amount provided in Section 287.017, Florida Statutes, for CATEGORY TWO with any person or affiliate on the convicted vendor list for a period of 36 months following the date that person or affiliate was placed on the convicted vendor list unless that person or affiliate has been removed from the list pursuant to Section 287.133(3)(f), Florida Statutes.

Therefore, effective October 1, 1990, prior to entering into a contract (formal contract or purchase order in excess of the threshold amount provided in Section 287.017, Florida Statutes, for CATEGORY TWO) to provide goods or services to **THE CITY OF TITUSVILLE**, a person shall file a sworn statement with the contracting officer or Purchasing Director, as applicable. The attached statement or affidavit will be the form to be utilized and must be properly signed in the presence of a notary public or other officer authorized to administer oaths and properly executed.

THE INCLUSION OF THE SWORN STATEMENT OR AFFIDAVIT SHALL BE SUBMITTED CONCURRENTLY WITH YOUR BID, BID OR REPLY DOCUMENTS. NON-INCLUSION OF THIS DOCUMENT MAY NECESSITATE REJECTION OF YOUR QUOTE, BID OR BID.

SWORN STATEMENT UNDER SECTION 287.133(3)(a), FLORIDA STATUTES,
ON **PUBLIC ENTITY CRIMES**

THIS FORM MUST BE SIGNED IN THE PRESENCE OF A NOTARY PUBLIC OR OTHER OFFICER AUTHORIZED TO ADMINISTER OATHS.

1. This sworn statement is submitted with the Bid Document Package. Bid/Bid for THE CITY OF TITUSVILLE.

2. This sworn statement is submitted by AMCON Development Group LLC whose business address is 1170 Tree Swallow Drive #337 Winter Springs, FL 32708 and (if applicable) its Federal Employer Identification (FEIN) is 83-1350772.

3. My name is Zacharie Amkraut (please print name of individual signing) and my relationship to the entity named above is Manager.

4. I understand that a "public entity crime" as defined in Paragraph 287.133(1)(g), Florida Statutes, means a violation of any state or federal law by a person with respect to and directly related to the transaction of business with any public entity or with an agency or political subdivision of any other state or with the United States, including, but not limited to, any bid, Bid, reply or contract for goods or services, any lease for real property, or any contract for the construction or repair of a public building or public work, involving antitrust, fraud, theft, bribery, collusion, racketeering, conspiracy, or material misrepresentation.

5. I understand that "convicted" or "conviction" as defined in Paragraph 287.133(1)(b), Florida Statutes, means a finding of guilt or a conviction of a public entity crime, with or without an adjudication of guilt, in any federal or state trial court of record relating to charges brought by indictment or information after July 1, 1989, as a result of a jury verdict, nonjury trial, or entry of a plea of guilty or nolo contendere.

6. I understand that an "affiliate" as defined in Paragraph 287.133(1)(a), Florida Statutes, means:

(1) A predecessor or successor of a person convicted of a public entity crime; or

(2) An entity under the control of any natural person who is active in the management of the entity and who has been convicted of a public entity crime. The term "affiliate" includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in the management of an affiliate. The ownership by one person of shares constituting a controlling interest in another person, or a pooling of equipment or income among persons when not for fair market value under an arm's length agreement, shall be a prima facie case that one person controls another person. A person who knowingly enters into a joint venture with a person who has been convicted of a public entity crime in Florida during the preceding 36 months shall be considered an affiliate.

7. I understand that a "person" as defined in Paragraph 287.133(1)(e), Florida Statutes, means any natural person or entity organized under the laws of any state or of the United States with the legal power to enter into a binding contract and which bids or applies to bid on contracts let by a public entity, or which otherwise transacts or applies to transact business with a public entity. The term "person" includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in management of an entity.

8. Based on information and belief, the statement which I have marked below is true in relation to the entity submitting this sworn statement. (Please indicate which statement applies.)

__X__ Neither the entity submitting this sworn statement, nor any officers, directors, executives, partners, shareholders, employees, members, or agents who are active in management of the entity, nor any affiliate of the entity have been charged with and convicted of a public entity crime subsequent to July 1, 1989.

_____ The entity submitting this sworn statement, or one or more of the officers, directors, executives, partners, shareholders, employees, members or agents who are active in management of the entity, or an affiliate of the entity has been charged with and convicted of a public entity crime subsequent to July 1, 1989, AND (Please indicate which additional statement applies.)

_____ There has been a proceeding concerning the conviction before a hearing officer of the State of Florida, Division of Administrative Hearings. The final order entered by the hearing officer did not place the person or affiliate on the convicted vendor list. (Please attach a copy of the final order.)

_____ The person or affiliate was placed on the convicted vendor list. There has been a subsequent proceeding before a hearing officer of the State of Florida, Division of Administrative Hearings. The final order entered by the hearing officer determined that it was in the public interest to remove the person or affiliate from the convicted vendor list. (Please attach a copy of the final order.)

_____ The person or affiliate has not been placed on the convicted vendor list. (Please describe any action taken by or pending with the Department of General Services.)

_____
(Signature)

Date: 1/5/26

Notary Public Information

STATE OF Florida

COUNTY OF Seminole

The foregoing instrument was acknowledged before me by means of ☒ physical presence or ☐ online notarization, this 5th day of January, 2026, by Zacharie Amkraut.
(year) (name of person acknowledging).

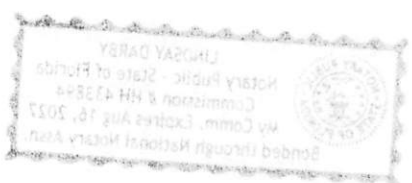
Lindsay Darby
(Print, Type, or Stamp Commissioned Name of Notary Public)

Lindsay Darby
(Signature of Notary Public - State of Florida)

Personally Known X OR Produced Identification _____

Type of Identification Produced DL

LINDSAY DARBY
Notary Public - State of Florida
Commission # HH 433894
My Comm. Expires Aug 16, 2027
Bonded through National Notary Assn.


LINDSAY DARBY
NOTARY Public - State of Florida
Commission # HH 423944
My Comm. Expires Aug 16, 2022
Bonded through National Notary Assn.

PLEASE COMPLETE AND SUBMIT WITH BID

CONTRACTOR AFFIDAVIT REGARDING SCRUTINIZED COMPANY LIST

Awarded Contractor shall certify that it and its subcontractors are not on the Scrutinized Companies that Boycott Israel List. Pursuant to Section 287.135, F.S. If the Agreement is for more than $1,000,000 the Contractor further certifies that it and its subcontractors are also not on the Scrutinized Companies with Activities in Sudan, Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, or engaged with business operations in Cuba or Syria as identified in Section 287.135, F.S. For Contracts of any amount, if the City determines the Contractor submitted a false certification under Section 287.135(5) of the Florida Statutes, or if the Contractor has been placed on the Scrutinized Companies that Boycott Israel List, or is engaged in a boycott of Israel, the City shall either terminate the Contract after it has given the Contractor notice and an opportunity to demonstrate the City's determination of false certification was in error pursuant to Section 287.135(5)(a) of the Florida Statutes, or on a case-by-case basis the City may choose to maintain the Contract if the conditions of Section 287.135(4) of the Florida Statutes are met. For Contracts $1,000,000 and greater, if the City determines the Contractor submitted a false certification under Section 287.135(5) of the Florida Statutes, or if the Contractor has been placed on the Scrutinized Companies with Activities in the Sudan List, or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, the City shall either terminate the Contract after it has given the Contractor notice and an opportunity to demonstrate the City's determination of false certification was in error pursuant to Section 287.135(5)(a) of the Florida Statutes, or on a case-by-case basis the City may choose to maintain the Contract if the conditions of Section 287.135(4) of the Florida Statutes are met.

The Affiant, by virtue of the signature below, certifies that:

1. The Business address of AMCON Development Group LLC (name of bidder or contractor) is 1170 Tree Swallow Drive #337 Winter Springs, FL 32708.
2. My relationship to AMCON Development Group LLC (name of bidder or contractor) is Manager (relationship such as sole proprietor, partner, president, vice president).
3. I understand that "Boycott of Israel" has the same meaning as defined in §215.4725, Florida Statutes, and means refusing to deal, terminating business activities, or taking other actions to limit commercial relations with Israel, or persons or entities doing business in Israel or in Israeli controlled territories, in a discriminatory manner. A statement by a company that it is participating in a boycott of Israel, or that it has initiated a boycott in response to a request for a boycott of Israel or in compliance with, or in furtherance of, calls for a boycott of Israel, may be considered by the State Board of Administration to be evidence that a company is participating in a boycott of Israel. The term does not include restrictive trade practices or boycotts fostered or imposed by foreign countries against Israel.
4. I understand that "business operations" means, for purposes specifically related to Cuba or Syria, engaging in commerce in any form in Cuba or Syria, including, but not limited to, acquiring, developing, maintaining, owning, selling, possessing, leasing, or operating equipment, facilities, personnel, products, services, personal property, real property, military equipment, or any other apparatus of business or commerce.

5. AMCON Development Group LLC (name of the bidder or contractor) is not on the Scrutinized Companies that Boycott Israel List, created pursuant to s. 215.4725, Florida Statutes, or is engaged in a boycott of Israel.
6. AMCON Development Group LLC (name of the bidder or contractor) is not on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, created pursuant to s. 215.473, Florida Statutes.
7. AMCON Development Group LLC (name of the bidder or contractor) is not engaged in business operations in Cuba or Syria.

Zacharie Amkraut Manager AMCON Development Group LLC

Signature Printed Name Title Name of bidder or contractor

Notary Public Information

STATE OF Florida

COUNTY OF Seminole

The foregoing instrument was acknowledged before me by means of ☒ physical presence or ☐ online notarization, this 5th day of January, 2026, by Zacharie Amkraut.
(year) (name of person acknowledging).

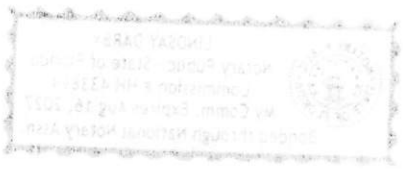
Lindsay Darby
(Print, Type, or Stamp Commissioned Name of Notary Public)

(Signature of Notary Public -)

Personally Known X OR Produced Identification _____

Type of Identification Produced DL

LINDSAY DARBY
Notary Public - State of Florida
Commission # HH 433894
My Comm. Expires Aug 16, 2027
Bonded through National Notary Assn.



PLEASE COMPLETE AND SUBMIT WITH BID

City of Titusville
E-Verify Affidavit

Obligation for State Funded Contracts:

Executive Order 11-116, which supersedes Executive Order 11-02, directs all agencies under the direction of the Governor to verify the employment eligibility of all new agency employees through the U.S. Department of Homeland Security's E-Verify system. Further, agencies are directed to include as a condition of all contracts for the provision of goods or services to the state in excess of nominal value, an express requirement that contractors utilize the U.S. Department of Homeland Security's E-Verify system to verify the employment eligibility of all new employees hired by the contractor during the contract term, and an express requirement that contractors include in such subcontracts the requirement that subcontractors performing work or providing services pursuant to the state contract utilize the E-Verify system to verify the employment eligibility of all new employees hired by the subcontractor during the contract term.

In accordance with Executive Order 11-116, City of Titusville requires all vendors doing business with the City who are awarded state-funded contracts to verify employee eligibility using the E-Verify system. It is the responsibility of the awarded vendor to ensure compliance with E-Verify requirements (as applicable). To enroll in E-Verify, employers should visit the E-Verify website (http:// www.uscis.govle-verify) and follow the instructions. The employer must, as usual, retain the 1-9 Forms for inspection.

By affixing your signature below, you hereby affirm that you will comply with E-Verify requirements.

Federal Employer Identification Number (FEIN): 83-1350772

Zacharie Amkraut	Manager	
Printed Name of Affiant	Printed Title of Affiant	Signature of Affiant

AMCON Development Group LLC	1/5/26
Name of Contractor	Date

1170 Tree Swallow Drive #337 Winter Springs	FL	32708
Address of Contractor	State	Zip Code

Notary Public Information

STATE OF Florida

COUNTY OF Seminole

The foregoing instrument was acknowledged before me by means of ☒ physical presence or ☐ online notarization, this 5th day of January, 2026, by Zacharie Amkraut.
(year) (name of person acknowledging).

Lindsay Darby	Lindsay Darby
(Print, Type, or Stamp Commissioned Name of Notary Public)	(Signature of Notary Public -)

Personally Known X OR Produced Identification _____

Type of Identification Produced DL

LINDSAY DARBY
Notary Public - State of Florida
Commission # HH 433894
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Bonded through National Notary Assn.

PLEASE COMPLETE AND SUBMIT WITH BID

DRUG-FREE WORKPLACE CERTIFICATION

In case of tie bids, preference must be given to vendors submitting a certification with their bid/ Bid certifying they have a drug-free workplace in accordance with Section 287.087, Florida Statutes. The drug-free certification form below must be signed and returned with your bid.

In order to have a drug-free workplace program, a business shall:

(1) Publish a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the workplace and specifying the actions that will be taken against employees for violations of such prohibition. (2) Inform employees about the dangers of drug abuse in the workplace, the business' policy of maintaining a drug-free workplace, any available drug counseling, rehabilitation, and employee assistance programs, and the penalties that may be imposed upon employees for drug abuse violations. (3) Give each employee engaged in providing the commodities or contractual services that are under bid a copy of the statement specified in the first paragraph. (4) In the statement specified in the first paragraph, notify the employees that, as a condition of working on the commodities or contractual services that are under bid, the employee will abide by the terms of the statement and will notify the employer of any conviction of, or plea of guilty or nolo contendere to, any violation of chapter 893 or of any controlled substance law of the United States or any state, for a violation occurring in the workplace no later than five (5) days after such conviction. (5) Impose a sanction on, or require the satisfactory participation in a drug abuse assistance or rehabilitation program if such is available in the employee's community, by any employee who is so convicted. (6) Make a good faith effort to continue to maintain a drug-free workplace through implementation of this section.

As the person authorized to sign the statement, I certify that this Contractor complies fully with the above requirements.

Manager 1/5/26

Vendor's Signature, Title, Date

Notary Public Information

STATE OF Florida
COUNTY OF Seminole
The foregoing instrument was acknowledged before me by means of ☒ physical presence or ☐ online notarization, this 5th day of January, 2026, by Zacharie Amkraut.
(year) (name of person acknowledging).

Lindsay Darby — Lindsay Darby

(Print, Type, or Stamp Commissioned Name of Notary Public) (Signature of Notary Public -)

Personally Known X OR Produced Identification _____

Type of Identification Produced DL

LINDSAY DARBY
Notary Public - State of Florida
Commission # HH 433894
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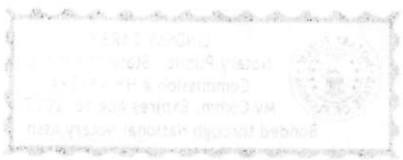


PLEASE COMPLETE AND SUBMIT WITH BID

CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

Contractor Covered Transactions

(1) The prospective contractor AMCON Development Group LLC of the City of Titusville, certifies, by submission of this document, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.

(2) Where the Recipient's contractor is unable to certify to the above statement, the prospective contractor shall attach an explanation to this form.

CONTRACTOR:
AMCON Development Group LLC

CITY OF TITUSVILLE:

Signature

Name and Title
Zacharie Amkraut/Manager

Contract Number

Street Address
1170 Tree Swallow Drive #337

Winter Springs, FL 32708

City, State, Zip

Date 1/5/26

PLEASE COMPLETE AND SUBMIT WITH BID

CERTIFICATION OF BIDDER REGARDING EQUAL EMPLOYMENT OPPORTUNITY

INSTRUCTIONS

This certification is required pursuant to Executive Order 11246 (30 F.R. 12319-25). The implementing rules and regulations provide that any bidder or prospective Consultant, or any of their proposed subconsultants, shall state as an initial part of the bid or negotiations of the contract whether it has participated in any previous contract or subcontract subject to the equal opportunity clause; and, if so, whether it has filed all compliance reports due under applicable instructions.

Where the certification indicates that the bidder has not filed a compliance report due under applicable instructions, such bidder shall be required to submit a compliance report within seven calendar days after bid opening. No contract shall be awarded unless such a report is submitted.

CERTIFICATION BY BIDDER

AMCON Development Group LLC
1170 Tree Swallow Dr. #337
Winter Springs FL, 32708

NAME AND ADDRESS OF BIDDER (Include ZIP Code)

1. Bidder has participated in a previous contract or subconsultant subject to the Equal Opportunity Clause.

   X Yes _____ No

2. Compliance reports were required to be completed in connection with such contract or subcontract.

   X Yes _____ No

3. Bidder has filled all compliance reports due under applicable instructions.

   X Yes _____ No

4. Have you ever been or are you being considered for sanction due to violation of Executive Order 11246, as amended? _____ Yes X No

Zacharie Amkraut/Manager
NAME AND TITLE OF SIGNER (Please type)

SIGNATURE DATE 1/5/26

PLEASE COMPLETE AND SUBMIT WITH BID

FORM OF NON-COLLUSION AFFIDAVIT

(This Afffdavit is Part of Bid)

BID CERTIFICATION FORM OF NON-COLLUSION AFFIDAVIT

(This Affidavit is Part of Bid) STATE OF Florida)

) SS.

COUNTY OF Seminole)

being first duly sworn, deposes and says that he is Manager

(Sole owner, a Partner, President, Secretary, etc.)

of AMCON Development Group LLC

the party making the foregoing Bid or Bid that such Bid is genuine and not collusive or sham; that said BIDDER has not colluded, conspired, connived, or agreed, directly or indirectly, with any BIDDER or person, to put in a sham Bid, or that such other person shall refrain from bidding, and has not in any manner, directly or indirectly sought by agreement or collusion, or communication or conference, with any person, to fix the Bid Price of affiant or any other BIDDER, or to fix any overhead, profit or cost element of said Bid Price, or of that of any other BIDDER, or to secure any advantage against CITY any person interested in the proposed Contract; and that all statements in said Bid or Bid are true; and further, that such BIDDER has not, directly or indirectly submitted this BID, or the contents thereof, or divulged information or date relative thereto to any association or to any member or agent thereof.

(Bidder)

Notary Public Information

STATE OF Florida

COUNTY OF Seminole

The foregoing instrument was acknowledged before me by means of ☒ physical presence or ☐ online notarization, this 5th day of January, 2026, by Zacharie Amkraut.
(year) (name of person acknowledging).

Lindsay Darby
(Print, Type, or Stamp Commissioned Name of Notary Public)

Lindsay Darby
(Signature of Notary Public -)

Personally Known X OR Produced Identification _____ Type of Identification Produced DL

LINDSAY DARBY
Notary Public - State of Florida
Commission # HH 433894
My Comm. Expires Aug 16, 2027
Bonded through National Notary Assn.

PLEASE COMPLETE AND SUBMIT WITH BID

DISCLOSURE FORM
FOREIGN INFLUENCE ON CONTRACTS OR GRANTS HAVING A VALUE OF $100,000 OR MORE

Summary of Form: In order for the City to comply with section 286.101, Florida Statutes, all prospective contractors and grant recipients seeking to contract with the City, or receive a grant from the City, where said contract or grant has a value of $100,000 or more must disclose to the City (1) any current or prior interest of, (2) any contract with, or (3) any grant or gift received from a foreign country of concern (defined as the People's Republic of China, the Russian Federation, the Islamic Republic of Iran, the Democratic People's Republic of Korea, the Republic of Cuba, the Venezuelan regime of Nicolas Maduro, and the Syrian Arab Republic, or an agency or other entity under the significant control of such foreign country of concern) if such interest, contract, or grant or gift has a value of $50,000 or more and such interest existed at any time or such contract or grant or gift was received or in force at any time during the previous five years. The disclosure is specified below. Within one year before applying for any grant or proposing any Contract, such entity must provide a copy of such disclosure to the Department of Financial Services. Disclosure is not required in certain circumstances, outlined below. A Contract is any agreement for the direct benefit or use of any party to such agreement, including an agreement for the sale of commodities or services. A Gift is any transfer of money or property from one entity to another without compensation. A Grant is a transfer of money for a specified purpose, including a conditional gift. An interest in an entity means any direct or indirect investment in or loan to the entity valued at 5 percent or more of the entity's net worth or any form of direct or indirect control exerting similar or greater influence on the governance of the entity.

I. SECTION I. Please answer yes or no to each statement below:

YES / (NO) I AM BIDDING ON A CONTRACT/APPLYING FOR A GRANT WITH A POTENTIAL VALUE UNDER $100,000. If yes, this disclosure form has been completed. Please sign and date at the bottom.

YES / (NO) I AM BIDDING ON A CONTRACT/APPLYING FOR A GRANT WITH A POTENTIAL VALUE OF OVER $100,000. If yes, proceed to the next question.

YES / (NO) I HAVE MADE A FOREIGN INFLUENCE DISCLOSURE ONLINE WITH THE DEPARTMENT OF FINANCIAL SERVICES. If yes, please proceed to SECTION IV and provide the date of the disclosure, your name and address. Then sign and date at the bottom.

SECTION II. Please answer yes or no to the statement below:

YES / (NO) Bidder/Grantee has (1) a current or prior interest of, any contract with, or any grant or gift received from a foreign country of concern (defined as the People's Republic of China, the Russian Federation, the Islamic Republic of Iran, the Democratic People's Republic of Korea, the Republic of Cuba, the Venezuelan Regime of Nicolas Maduro, and the Syrian Arab Republic, or an agency or other entity under the significant control of such foreign country of concern); and (2) such interest, contract, or grant or gift has a

value of $50,000 or more; and (3) such interest existed, or such contract or grant or gift was received or in force at any time during the previous five years.

SECTION III. If you answered NO to SECTION II, you have completed this form. Please sign/date at the bottom. If you answered YES to SECTION II, then answer YES or NO to the following:

YES / NO This is a proposal to sell commodities through an online procurement programs established pursuant to section 287.057(22), Florida Statutes.

YES / NO This is a proposal from an entity that discloses foreign gifts or grants under section 1010.25 or section 286.101(2), Florida Statutes.

N/A

YES / NO This is a proposal from a foreign source that, if granted or accepted, would be disclosed under section 286.101(2) or section 1010.25, Florida Statutes.

YES / NO This is a proposal from a public or not-for-profit research institution with respect to research funded by any federal Agency.

SECTION IV. If you answered YES to any question in SECTION III, you have completed this form. Please sign/date at the bottom. If you answered NO to all of the questions in SECTION III, then you must make the following disclosures online to the State of Florida Department of Financial Services before the County may contract with you or award you said grant. Please disclose the following:

Date Disclosure of the information below was made by Bidder/Grantee to the State of Florida Department of Financial Services online: _____

Name of Bidder/Grantee: _____

Mailing Address of Bidder/Grantee: _____

Value of the Contract/Grant or Gift: _____

N/A

Foreign Country of Concern or the Agency or other entity under the significant

Control of such Foreign country of Concern: _____

Date of Termination of the contract or interest with the Foreign Country of Concern:

Date of Receipt of the Contract/Grant or Gift: _____

Name of the agent or controlled entity that is the source or interest holder:

_____

I verify that the information provided on this form is true and correct, and that I am duly authorized to make said binding disclosures on behalf of myself or my Company, as applicable.

Company Name AMCON Development Group LLC

Signature: _____ Date: 1/5/26

Title: Manager

STATE OF FLORIDA

COUNTY OF Seminole

Sworn to and subscribed before me by means of physical presence or X online notarization, this 5th day of January, 2026, by (name of person making statement).
Zacharie Amkraut

[Notary Seal]

Notary Public
Lindsay Darby

Name typed, printed or stamped
Lindsay Darby

LINDSAY DARBY
Notary Public · State of Florida
Commission # HH 433894
My Comm. Expires Aug 16, 2027
Bonded through National Notary Assn.

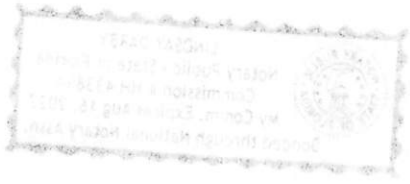
My Commission Expires:
08/16/27

Personally Known OR X Produced Identification

Type of Identification Produced DL

Date
1/5/26

EIN of Prospective Contractor – print/type
83-1350772



CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 11/4/2025

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER
Laurenza Insurance Group, LLC DBA LIG Specialty Insurance
328 Wilshire Blvd
Casselberry FL 32707

License#: L066604

CONTACT NAME:
PHONE (A/C, No, Ext): 407-261-2363 **FAX (A/C, No):** 407-442-0817
E-MAIL ADDRESS: coi@ligspecialty.com

INSURER(S) AFFORDING COVERAGE	NAIC #
INSURER A : Richmond National Insurance Co	17103
INSURER B : Infinity Assurance Insurance C	39497
INSURER C : Evanston Insurance Company	35378
INSURER D :	
INSURER E :	
INSURER F :	

INSURED
AMCODEV-01
AMCON DEVELOPMENT GROUP LLC
1170 Tree Swallow Drive
Unit 337
Winter Springs FL 32708

COVERAGES **CERTIFICATE NUMBER:** 1456811682 **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	X **COMMERCIAL GENERAL LIABILITY** CLAIMS-MADE X OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: X POLICY X PRO-JECT LOC OTHER:	Y	Y	RN-7-0510052	3/21/2025	3/21/2026	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG 	$ 1,000,000 $ 100,000 $ 5,000 $ 1,000,000 $ 2,000,000 $ 2,000,000 $
B	**AUTOMOBILE LIABILITY** X ANY AUTO OWNED AUTOS ONLY HIRED AUTOS ONLY SCHEDULED AUTOS NON-OWNED AUTOS ONLY			50010509101	4/29/2025	4/29/2026	COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident) PIP	$ 1,000,000 $ $ $ $ 10,000
A	**UMBRELLA LIAB** X OCCUR X **EXCESS LIAB** CLAIMS-MADE DED RETENTION $			RN-7-0510053	3/21/2025	3/21/2026	EACH OCCURRENCE AGGREGATE 	$ 1,000,000 $ 1,000,000 $
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY Y / N ANYPROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? N / A **(Mandatory in NH)** If yes, describe under DESCRIPTION OF OPERATIONS below						PER STATUTE OTH-ER E.L. EACH ACCIDENT E.L. DISEASE - EA EMPLOYEE E.L. DISEASE - POLICY LIMIT	 $ $ $
C	PollutionLiability			CPLMOL134738	9/29/2025	9/29/2026	EachOccurence	1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)
General Contractor
Zacharie Aaron Amkraut License # CGC1527224

CERTIFICATE HOLDER

OFFICE USE

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

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City of Winter Springs
1126 East State Road 434
Winter Springs, FL 32708
(407) 327-5963
www.winterspringsfl.org

BUSINESS TAX RECEIPT

Business Name:	AMCON Development Group LLC		
Business Location:	1170 TREE SWALLOW DR WINTER SPRINGS, FL 32708	**Mailing Address:**	1170 TREE SWALLOW DR WINTER SPRINGS, FL 32708
Owner:	Zacharie Amkraut		
License Number:	BTR-COMM-000528-2024	**License Type:**	Commercial Business Tax Receipt
Issued Date:	9/30/2025	**Classification:**	Commercial Business Tax Receipt
Expiration Date:	9/30/2026	**Fees Paid:**	$100.00

Business Activity: Consultant
State Regulation: Non-Regulated

BUSINESS TAX RECEIPT WINTER SPRINGS DOES NOT INCLUDE SEMINOLE COUNTY TAX

TO BE POSTED IN A CONSPICUOUS PLACE

Ron DeSantis, Governor

Melanie S. Griffin, Secretary

Florida dbpr

STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION

CONSTRUCTION INDUSTRY LICENSING BOARD

THE GENERAL CONTRACTOR HEREIN IS CERTIFIED UNDER THE
PROVISIONS OF CHAPTER 489, FLORIDA STATUTES

AMKRAUT, ZACHARIE A

AMCON DEVELOPMENT GROUP LLC
249 MORTON LANE
WINTER SPRINGS FL 32708

LICENSE NUMBER: CGC1527224

EXPIRATION DATE: AUGUST 31, 2026

Always verify licenses online at MyFloridaLicense.com

ISSUED: 08/20/2024

Do not alter this document in any form.

This is your license. It is unlawful for anyone other than the licensee to use this document.

Bid #: CN26-B-004/LR	Due Date: **December 9, 2025 @ 3:00 PM**	Mail Date: November 7, 2025
Leslie Rothering/ Purchasing and Contracting	Respond: 555 South Washington Avenue Titusville, Florida 32796	
Bid Title/Name: **REPLACEMENT OF SEMINOLE LIFT STATION AND DEMOLITION OF BAYVIEW LIFT STATION**		
Pre-Bid Meeting: **Non-Mandatory - – *November 20, 2025 @ 10:00 a.m. – Public Works Administration, 2000 S Washington Ave, Titusville, FL 32780***		

CITY OF TITUSVILLE, FLORIDA

Standard Contract Book & Special Provisions

REPLACEMENT OF SEMINOLE LIFT STATION AND DEMOLITION OF BAYVIEW LIFT STATION

1

NOTICE OF INVITATION FOR BIDS

BID NUMBER: CN-26-B-004/LR

TITLE: **REPLACEMENT OF SEMINOLE LIFT STATION AND DEMOLITION OF BAYVIEW LIFT STATION**

DUE DATE: December 9, 2025 @ 3:00P.M.

The City of Titusville intends to contract for the installation of a new Seminole Lift Station and demolition/abandonment of the existing Seminole Lift Station. Demolition/abandonment of the Bayview Lift Station. Maintaining operations of all systems during construction. Installation of new gravity system from the Seminole Lift Station to the Bayview Lift Station and other Work indicated in the Contract Documents.

All work shall be in accordance to provided plans and specifications provided by the City's consultant CDM Smith, Inc.

Bids will be accepted by the city of Titusville at city hall, 555 s. Washington avenue, Titusville, Florida 32796, until **December 9, 2025 @ 3:00 p.m.,** at which time and date the bids will be publicly opened in the city council chamber. any bids received after the time and date specified above will not be considered. sealed envelopes shall contain the name of the bidder and be marked as follows:
:

Bids shall be submitted in one (1) original hard copy along with an electronic copy on CD or USB drive. Firms interested in submitting a bid may obtain a complete bid package from Demand Star, or may request the bid package from the Purchasing and Contracting Administration office by email at leslie.rothering@titusville.com. The bid package will be provided in electronic format as a pdf document upon request. All questions about the meaning or intent of the Bidding Documents must be submitted in writing to Leslie Rothering, City of Titusville Purchasing Services and Contracting, 555 N Washington Ave, Titusville, FL. Written questions may be mailed or sent via email to: Leslie.Rothering@Titusville.com All questions should be received in writing prior to 5:00 p.m. on December 2, 2025.

Contractors shall be properly licensed to conduct its business in the City of Titusville, with all licenses, permits, and certificates as required by all local, State of Florida, and Federal agencies.

A Non-Mandatory Pre-Bid will be held on November 20, 2025 at 10:00 A.M. at Public Works Dept Administration, 2000 S. Washington Avenue, Titusville, FL 32780.

No bid shall be considered unless sealed and filed with the Purchasing & Contracting Office at the address specified, no later than the time set forth above. The official time will be the date and time packet is stamped received in the Purchasing and Contracting Office. Each bid must be accompanied by all bid forms provide within the Solicitation packet and a Bidder's Bond, payable to City of Titusville, Florida for five percent (5%) of the amount of the bid; to be forfeited as liquidated damages in the event that the bid is accepted, and the bidder fails to enter promptly into a written

contract and furnish the required Performance Bond, Payment Bond, and Insurance Certificates. Bids arriving after the designated time will be returned unopened.

Payment and Performance Bond in an amount equal to 100% of the contract amount will be required as well as a one-year Maintenance Bond equal to 10% of the final contract.

The City reserves the right to make any changes to this bid, or to reject any and all, or parts of any and all bids, or to accept any bid or portion thereof deemed to be in the best interest of the City, or postpone or cancel, at any time, this bid, or to re-solicit this bid, or to waive any irregularities in this bid or in the offers received as a result to this bid. The City also reserves the right to request clarification or information from any bidder. The City is not liable for any expenses incurred by any firm as a result of being a respondent to this solicitation.

Bidder Checklist

One (1) original hardcopy completed on the Bid Packet as furnished with one (1) electronic copy using a CD or USB drive. Following items must be included with submittal for Bid to be considered responsive.

- ☐ Bidder's Checklist & Addendum Acknowledgements – **Page 4**
- ☐ Bid Form and Price Proposal Form – **Page 89**
- ☐ Bid Bond ON BID BOND FORM PROVIDED – **Page 95**
- ☐ Certificate as to Corporate Principal – **Page 96**
- ☐ Affidavit – **Page 99**
- ☐ Subcontractor list – **Page 100**
- ☐ Questionnaire Form (including References) **- Page 101**
- ☐ Trench Safety – **Page 103**
- ☐ Public Entity Crimes **- Page 105**
- ☐ Scrutinized Companies Certificate: Pursuant to Florida Statute § 287.135 – **Page 109**
- ☐ E-Ver0ify Affidavit E-Verify #_____ **Page 111**
- ☐ Drug Free Workplace Certification – **Page 112**
- ☐ Certification Regarding Debarment Suspension, Ineligibility,Voluntary Exclusion – **Page 113**
- ☐ Equal Employment Opportunity Certification – **Page 114**
- ☐ Form of Non-Collusion Affidavit – **Page 115**
- ☐ Disclosure Form Foreign Influence _ **Page 116**
- ☐ DEP Contract Certification Form _ **Attachment A**
- ☐ Coronavirus State and Local Fiscal Recovery Funds Special Provisions **Attachment 8**

Addendum Acknowledgment - Bidder acknowledges that the following addenda have been received and are included in this Bid:

☐ Addendum 1_____ Dated _____

☐ Addendum 1_____ Dated _____

☐ Addendum 1_____ Dated _____

Proof that your firm is licensed to perform this work, proof of insurance, and all completed Required Forms within this packet must be included with this bid for your bid to be considered.

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TECHNICAL

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S E C T I O N 1

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INSTRUCTIONS TO BIDDERS

1.1. Definition of Terms:

Whenever in the Contract Documents the following terms (or pronouns in place of them) are used, the intent and meaning of such terms shall be interpreted as follows:

a) City: The City of Titusville, Florida

b) Owner: The City of Titusville, Florida

c) City Manager: The City Manager of the City of Titusville, Florida, being the administrative head of the City as described in the City Charter.

d) Purchasing & Contracting Administrator: The Purchasing & Contracting Administrator is the employee of the City of Titusville responsible for the overall coordination and oversight of the contract assuring that all contractual obligations are completed satisfactorily and in accordance with the Contract terms and conditions. The PCA will have complete responsibility to receive notices, transmit instructions and communicate policies and decisions regarding all contract matters including technical matters that may affect the contract terms and conditions. The City's Purchasing & Contracting Administrator can be reached during normal office hours by Phone: 321.567.3973/Fax 321.383.5628, or at City Hall, 555 S. Washington Avenue, Titusville, Florida 32796.

e) Project Manager: The Project Manager is the employee of the City of Titusville responsible for the overall coordination, oversight and management of the Work. All Work done shall be subject to the review of the Project Manager and City. Any and all technical questions which may arise as to the quality and acceptability of materials furnished, work performed, or work to be performed, interpretation of all technical questions as to the fulfillment of the Contract on the part of the Contractor, shall be referred to the Project Manager, who will have responsibility to resolve such questions, and transmit instructions and communicate decisions of technical nature to the Contractor, in writing, regarding matters pertinent to performance of the Work. The City shall not be responsible for the acts or omissions of the Contractor. Any changes to the scope of work or any deviations from the contract documents must be approved in writing through the

Purchasing & Contracting Administrator in accordance with Section 4, paragraph 4.2 Changes in Work.

f) Engineer: CDM Smith

g) Inspector: An employee or a designated representative of the City, assigned to make any or all necessary inspections of Work performed, and materials furnished by the Contractor and reporting directly to the Project Manager or the City Engineer or the Purchasing & Contracting Administrator.

h) Person: The word Person shall mean and include any individual, partnership, society, association, joint stock company, corporation, estate, receiver, trustee, assignee, referee, or capacity, whether appointed by a court or otherwise, and any combination thereof.

i) Bidder: Any person who submits a Proposal for the Work described in the Notice to Bidders and pursuant to these Contract Documents

j) Contractor: The Firm whose Proposal the City will accept and who shall thereafter enter into a form of Contract with the City to furnish the materials and do all the Work as bid upon.

k) Subcontractor: A Firm supplying material, labor, equipment or appurtenances for the Work at the site of the project. Such Firm has contractual relations with the Contractor, but not with the City.

l) Principal: When used in the Bid Bond, the word Principal means the same as the word Bidder. When used in the Contract Bond, the word Principal means the same as the word Contractor.

m) Surety: The corporation or individual, bound by the Contract Bond with and for the Contractor, and who is primarily liable and engages to be responsible for Contractor's acceptable performance of the Work for which the Contract has been made, and for his payment of all debts pertaining thereto.

n) Contract Documents: The Contract Documents shall mean and include the following:

1.

1. Notice to Bidders	2. Non-collusion Affidavit Form
3. Instruction to Bidders	4. Release of Lien (Partial/Final) Form
5. Price proposal Form	6. Bidder Qualification Questionnaire
7. Bid Bond Form	8. General Conditions
9. Affidavit	10. Special Provisions
11. Draft Contract	12. Technical Specifications
13. Certificate-Contract Execution	14. Foreign Disclosure Form
15. Performance & Payment Bond	16. Performance of Work By Sub-Contractors

17. Trench Safety Act	18. Copy of Business Tax Receipt & State of Florida Registration
19. Drug-Free Workplace Form	20. Public Entity Crime Form
21. Certificate Regarding Debarment Suspension, Ineligibility and Voluntary Exclusion	22. E-Verify
23.Scrutinized Companies	24. DEP Contract Certification Form _ **Attachment A** Coronavirus State and Local Fiscal Recovery Funds Special Provisions **Attachment 8**

o) Work: All Work to be performed by the Contractor in the fulfillment of the Contract, and includes all necessary materials, labor, equipment, and transportation, as described in the Contract Documents, for the contemplated improvement.

p) Scope of Work: The specific Work, improvement, or job, to which these Contract Documents apply, as described in Section I, (Description of Work) of the Contract.

q) Contract: The written agreement between the Owner and the Contractor for the performance of the Work in accordance with requirements of the Contract Documents and for the payment of the agreed consideration, therefore.

r) Addendum: A modification of the Plans or other Contract Documents issued by the Procurement Contracts Coordinator and distributed to prospective Bidders prior to the opening of bids.

s) Change Order: A written order issued by the Owner, or when authorized in this Contract, by the Purchasing & Contracting Administrator, to the Contractor directing certain changes, additions, or reductions in the Work or in the materials or methods to be used.

t) Or Equal: Whenever in the Contract Document and Plans, any particular brand, make of material, device, or piece of equipment is shown or specified, such brand, make of material, device or piece of equipment shall be regarded merely as a standard. If two or more brands, makes of material, devices, or pieces of equipment are shown or specified, each is to be regarded as the equal of the other. Any other brand, make of material, device, or piece of equipment, which, in the opinion of the Purchasing & Contracting Administrator, is the recognized equal of that specified, considering quality, Workmanship, economy of operation, and suitability for the purpose intended, will be acceptable.

u) Subgrade: That portion of the roadbed immediately below the base course or pavement (including below the curb and gutter, valley gutter, shoulder and driveway pavement); the limits of which will ordinarily include those portions of the roadbed shown in the plans to be constructed to a design bearing value or to be otherwise specially treated. Where no limits are showing on the plans, the sub-grade section shall be considered to extend to a depth of 12 inches below the bottom of the base or pavement and outward to six inches beyond the base, pavement or curb and gutter.

v) Architect: None.

w) Field Order: N/A

x) Proposal: Written response to the requirements of this bid (on the forms provided herein.)

1.2. Receipt and Opening of Bids

Bid proposals, together with Bid Bond, Specifications and Contract Bond, as completely assembled herewith, must be delivered in sealed, opaque envelopes, addressed to the Purchasing & Contracting Administration Division of the City of Titusville, Florida, at the date and time called for in the Notice of Invitation for Bids and shall be properly identified on the face thereof. The Bid proposal shall be made out upon the blank form included herewith, which must not be removed nor detached, from these Contract Documents.

Bid proposals will be publicly opened and immediately read aloud in the Council Chambers, City Hall, 555 S. Washington Ave., Titusville, Florida, at the time designated in the Notice to Bidders.

1.3. Qualifications of Bidder

The City reserves the right before awarding the Contract to require a Bidder to submit such evidence of his qualifications as it may deem necessary to properly evaluate the bid and may consider any evidence of the financial, technical and other qualifications and abilities of a Bidder. The City reserves the right to award the contract only to a Bidder who is fully qualified to undertake the Work.

1.4. Local Preference. The City of Titusville grants preference to those vendors, contractors or service providers whose primary business location is within the physical limits of the City of Titusville or Brevard County and have held a valid occupational license (Business Tax Receipts) for a period of no less than one year. Local business shall be defined in accordance with said ordinance which is available for review in the City Clerk's or Purchasing & Contracting Administrator's office and will be provided if requested for the cost of copying it.

1.5. Preparation of Bids

Bids must be submitted on Bid Price Proposal Form contained in this document or any subsequent revision thereto made and incorporated into the Contract Documents via addendum issued by the City's Purchasing & Contracts Division. All blank spaces in the Proposal must be filled in legibly and correctly handwritten in ink or typed. The Bidder shall specify the price per unit of measure and the extended total, or the lump sum bid price if such is called for, for each scheduled item of Work, as well as the Total Bid Price for the entire Work under the contract.

In the event of a bid item price discrepancy (math error when the bid total price for any bid item is not the result from applying the unit price stated by the bidder for such item to the item

quantity indicated in the bid) the bid unit price stated in the bid shall govern and prevail and the total bid price for such item will be corrected.

If the Bid is made by an individual, he or she must sign his name thereon and state his post office box/address and the name and address of every other person involved in the Bid as principal. If the Bid is made by a firm or partnership, its name and post office address must be stated as well as the name and address of each member of the firm or partnership. If the Bid is made by a corporation, the Bid must be signed by some authorized officer or agent, subscribing the name of the corporation with his own name and affixing the corporate seal. Such office or agent must also state the name of the State under which the corporation is chartered, the names and business address of the President, Secretary and Treasurer, as well as the registry with the Secretary of State of the State of Florida of such corporation for doing business in the State of Florida.

1.6. Plans and Other Contract Documents

The plans and other Contract Documents give the location and description of the Work to be done under this Contract, the estimated quantities of each item of Work for which Bids are invited, the time in which the Work must be complete, the amount of the Bid Guarantee, and the date, time and place of the receipt and opening of Bids.

1.7. Examination of Contract Documents and Site

The Bidder is required to examine carefully the site of the Work and the plans and other Contract Documents for the Work contemplated. It will be assumed that the Bidder has investigated and is fully informed as to the requirements of the plans and other Contract Documents, thus relieving the City of any costs incurred by the Bidder as a result of a misunderstanding or miscalculation of the Work.

1.8. Obligation of Bidder

The Bidder must inform himself fully of the conditions under which the Work is to be performed in relation to both construction and labor conditions, acquaint himself with all governing laws, ordinances, etc., and otherwise thoroughly familiarize himself with all matters which may affect the performance of the Work; failure to do so will not relieve a successful Bidder of his obligation to furnish all material, equipment and labor necessary to carry out the provisions of the Contract Documents and to complete the contemplated Work for the consideration set forth in his Bid.

It is the obligation of the Bidder to make his own investigations of sub-surface conditions prior to submitting his Bid. The record of borings, test excavations and other sub-surface investigations, if any, made for design purpose for the engineers are available in the Engineering Department. Such records are offered as information only and solely for the convenience of Bidders. The City does not warrant or guarantee that said borings, test excavations and other sub-surface investigations show the actual sub-surface conditions. The Contractor agrees that he will make no claims against Owner if in carrying out the Work he finds that the actual conditions encountered do not conform to those indicated by said borings, test excavations and other sub-surface investigations.

Any estimates or estimates of quantities of Work or materials shown on the plans or in the Proposal, based on said borings, test excavations and other sub-surface investigations or otherwise, are in no way warranted to indicate the true quantities or distribution of quantities.

1.9. Clarifications/Changes While Bidding

If any prospective Bidder for the proposed Contract is in doubt as to the true meaning of any part of the drawing, Specifications or other proposed Contract Documents, he may submit to the Procurement Contracts Coordinator a written request for an interpretation thereof. The Bidder submitting the request will be responsible for its prompt delivery. Any interpretation of the proposed documents will be mailed or delivered to each prospective Bidder who has received a complete set of Bidding Documents. The Owner will not be responsible for any other explanations or interpretations of the proposal documents.

During the Bidding period, Bidders may be furnished addenda or bulletins for additions or alterations to the contract documents, which shall be included in the Work covered by the Proposal.

1.10. Interpretation of Quantities

The quantities of Work to be done under this Contract, given in the Proposal, are not to be considered as fixed for each item. Such quantities are to be used for comparison of bids received and for payment. Changes in such quantities shall only be caused by addition to or deletion from the Contract by way of a Change Order. The Bidder shall not plead misunderstanding or deception because such listed quantities do not correspond with measured areas. Payment to the Contractor will be made only on the basis of the total quantity of Work actually performed in accordance with the plans and other Contract Documents, and it is understood that the quantities may be increased or diminished, by addition or deletion of entire facilities without in any way invalidating any of the unit prices bid. Quantities for any facilities added or deleted shall be computed in the same manner as that used for those listed on the plans.

1.11. Bid Guarantee

Each Bid must be accompanied by a Bid Guarantee in the form of a cashier's or certified check made payable to the City of Titusville, Florida, or a Bid Bond prepared on the form attached herein, duly executed by the Bidder as Principal and having a surety company satisfactory to the City (i.e., highly rated by "Best" or the "U.S. Treasury Listing".) The guarantee so furnished shall be in an amount of not less than five percent (5%) of the amount of the Total Bid Price. All certified checks must have attached thereto the necessary governmental documentary stamps. **Such checks or Bid Bonds will be returned to all except the three (3) lowest qualified Bidders within ten (10) days after the opening of Bids, and the remaining checks or Bid Bonds will be returned within three (3) days after the Owner and the successful Bidder have executed the Contract for the Work.**

The successful bidder, upon his failure or refusal to execute and deliver the Contract and bond required within ten days after he has received notice of the acceptance of this Bid, shall forfeit

to the City, as liquidated damages for such failures or refusal, the bid guarantee security deposited with the Bid.

1.12. Disqualification of Bidders

Any one of the following causes may be considered as sufficient for the disqualification of a Bidder and the rejection of his Bid:

a) Submission of more than one (1) Bid for the same Work by an individual, firm, partnership or corporation under the same or different names.

b) Evidence of collusion among Bidders.

c) Previous participation in collusive bidding on Work for the City of Titusville, Florida.

d) Submission of an unbalanced Bid in which the prices bid for some items are out of proportion to the prices bid for other items.

e) Lack of competency of Bidder- i.e., Bidder will be considered ineligible if at any time during the process of receiving bids or awarding the Contract, developments arise which -- in the opinion of the City -- adversely affect the Bidder's responsibility. However, the Bidder will be given an opportunity by the City to present additional evidence before final action is taken.

f) Lack of responsibility as shown by past Work judged from the standpoint of Workmanship and progress.

g) Uncompleted Work for which the Bidder is committed by Contract which, in the judgment of the City, might hinder or prevent the prompt completion of Work under this Contract if awarded to such Bidder.

h) Being in arrears on any of his existing contracts with the Owner, or in litigation with the Owner, or having defaulted on a previous contract with the Owner.

i) Promoting deliberate discriminatory practices.

This list is a representative sample of causes for disqualification and shall not be deemed to be all-inclusive.

1.13. Rejection of Irregular Bids

Bids will be considered irregular and may be rejected if they show omissions, alterations of form, additions not called for, conditions, limitations, unauthorized alternate bids or other irregularities of any kind.

The Owner reserves the right to waive any informalities or irregularities of bids.

1.14. Withdrawal of Bid

Any bid may be withdrawn prior to the time scheduled in the Notice to Bidders for the opening thereof.

1.15. Commencement and Completion of Work

Each Bidder shall state in his Proposal in the space provided for that purpose the number of calendar days he will commence the Work after receipt of Notice of Award of Contract and Notice to Proceed, and the number of calendar days required to complete the Contract after start of Work.

1.16. Liquidated Damages

Should the Bidder, as subsequent Contractor for the Work, become liable to assessment for liquidated damages for reasons set forth in Section 8.9 of General Conditions of these Specifications, the Contractor and his sureties shall pay to the Owner the sum for each calendar day for which liquidated damages are assessed in accordance with the stipulations set forth in said section.

1.17. Guarantee of Faithful Performance and Payment

A Performance and Payment Bond satisfactory to the Owner, on the form attached herein, in an amount of not less than the Total Bid Price, will be required of the successful Bidder to guarantee that he will deliver a completed project under his Contract in strict accordance with the Contract Documents, and will pay promptly all persons supplying him with labor or materials for the Work. This bond shall be written through a reputable and responsible Surety Bond Agency licensed to do business in the State of Florida, as rated by "Best" or the "U.S. Treasury Listing" and shall be delivered to the Purchasing & Contracting Administrator with the executed Contract as required in Section 1.18 of these Instructions to Bidders.

In addition to the above Bond, the Contractor shall be required to furnish a Maintenance Guarantee Bond, in the amount of ten percent (10%) of the final contract price, insuring the completed Work against defects in materials and Workmanship, for a period of one (1) year after the date of the final acceptance of the Work.

Additionally, the contractor may include a provision in the Performance Payment Bond guaranteeing the Work against defects in materials and Workmanship, for a period of one (1) year after the date of the final acceptance of the Work.

1.18. Award of Contract

The City reserves the right to accept any bid or portion thereof deemed to be in the best interest of the City as determined solely by the City.

Written notice of award of contract will be given to the Bidder that submits lowest price proposal (Unit Price Bids-The award will be made to the Bidder that submits the lowest price proposal total aggregate amount resulting from applying the unit price(s) submitted in the bid to

the quantity(ies) shown in the price proposal form) consisting of base bid plus any combination of alternates, if any, providing that such bid is both responsive and responsible as determined only by the City.

If the Bidder to whom the Contract is awarded forfeits his bid security and the award of the Contract is annulled, the City may then award the Contract to the next lowest and/or best Bidder, or the Work may be re-advertised or may be constructed by City forces without Contract as the City decides.

1.19. Execution of Contract

The Bidder to whom the Contract is awarded shall, within 10 days after issuance of the Notice of Award, execute and deliver to the Purchasing & Contracting Administrator in triplicate (3) the contract, his Performance and Payment Bond, and satisfactory evidence of all required insurance coverage and proof satisfactory to the Purchasing & Contracting Administrator of the authority of the person(s) executing the Contract and the Performance and Payment Bond on behalf of the Bidder. The above documents must be furnished, executed, and delivered before the Owner will execute the Contract. The Contract shall not be binding upon the Owner until the Owner has executed it and a copy of such fully executed Contract is delivered to the Contractor.

1.20. Failure to Execute Contract - Bid Guarantee Forfeited

Should the successful Bidder fail to execute and deliver the contract to the Purchasing & Contracting Administrator within the allotted time, the City at its option may find said bidder non-responsive and deem his bid guarantee as forfeited pursuant to these instructions. Failure of the bidder to execute the Contract may also result in additional sanctions pertaining to the bidding of future Work by the forfeiting bidder.

1.21. Notice and Service

All notices and demands, requests, instructions, approvals, and claims shall be in writing.

Any notice to or demand upon the Contractor shall be considered sufficiently given if delivered to the Contractor, his agent or superintendent. If the Contractor is a corporation, notices may be made to any officer of the corporation. Notice may also be given by registered or certified mail to the address of the Contractor shown on his bid or by delivery of a prepaid telegram to the Contractor's officer. All papers required to be delivered to the Owner shall be sent to the Purchasing & Contracting Administrator's office by registered or certified mail, a prepaid telegram, or by delivery in person. Notice will be deemed to have been given or made at the time of actual delivery.

1.22. Licenses

All contractors must be registered with the State of Florida to conduct business and provide services/commodities required within the scope of this bid.

All contractors must be holders of a current State Licenses/Certification (when applicable) before any contract for this Work will be awarded.

Contractors not holding such valid license/certification will be required to obtain such by qualifying through an examination conducted by the General Examining Board.

1.23. Labor Requirements

a) Civil Rights Act and Equal Employment Opportunity

The Contractor, when applicable, shall strictly conform to the provisions and promulgation the Civil Rights Act of 1964, Title VI (49 CFR Part 21), Equal Employment Opportunity Regulations (41 CFR Part 60), and any requirements or goals set for DBE participation for the project.

b) Wage Rates and Work Hours

The Contractor, when applicable, shall strictly conform to the provisions and promulgation of the Copeland and Davis-Bacon Acts requirements (29 CFR Part 3 and 29 CFR Part 5) and wage determination of the Department of Labor, the Contract Work Hours and Safety Standard Act (29CFR Part 5).

1.24. Other Federal Regulations

The Contractor, when applicable, agrees to comply with all the requirements of the Clean Air Act and Federal Water Pollution Control Act, OMB Uniform Guidance (2 CFR Part 200), and all associated terms and conditions; and FDEP Supplementary Conditions.

1.25. Permits/Inspections

The Contractor is responsible for obtaining and possessing any/all required permit(s).

a) Upon Notice of Award, the Contractor shall immediately apply for all other applicable permits to construct the Work from the appropriate governmental agency or agencies. No Work shall commence until all applicable permits have been obtained and copies delivered to the City/Engineer.

b) The Contractor shall strictly adhere to the specific requirements of the regulatory agencies having jurisdiction over the Work. Conditions of permits or requirements noted in permits shall be effective and included in the Contracted work.

Bidder shall also be responsible to ensure that appropriate City departments are notified when construction is to commence and to ensure that City, FDOT, and engineering inspections are called for as necessary. All provisions of applicable construction codes or City standards, as adopted by the City, shall be complied with.

******NOTE: Any permit(s) incurred by Contractor will be reimbursed dollar for dollar by City of Titusville with Application for Payment Invoice******

REPLACEMENT OF SEMINOLE LIFT STATION AND DEMOLITION OF BAYVIEW LIFT STATION

Construction Contract # CN26B004/LR

This Contract made and entered into this _____day of _____20_____, between the City of Titusville, Florida, a municipal corporation of the State of Florida, hereinafter referred to as the "City" or "Owner", and "_____., _____, _____", hereinafter referred to as the "Contractor".

Whereas, pursuant to all City Purchasing & Contracting policies, statutory requirements, and federal laws applicable, the City has competitively bid and advertised the Work titled "**BID#26B004/LR, Replacement of Seminole Lift Station and Demolition of Bayview Lift Station** "; and,

Whereas, the City desires to engage a licensed, qualified, and experienced Contractor who has special and unique competency in Lift Station and Demolition **projects** ; and,

Whereas, the Contractor represents that it is duly licensed, and it has such competence and experience in providing these services; and,

Whereas, the City in reliance on such representations has selected the Contractor in accordance with the requirements of law; and,

Whereas, at the regular City Council meeting of _____2025, the award of this contract was duly considered and approved; and,

Whereas, the City and the Contractor desire to reduce to writing their understanding and agreements on such.

It is, therefore agreed as follows:

1. **TERM**: This Agreement shall commence on the day it is executed by both parties and the term of the Agreement shall extend until completion of the project.
2. **DESCRIPTION OF WORK:** The Contractor shall furnish all supervision, labor, materials, supplies, tools, equipment and transportation necessary to perform and satisfactorily complete contract work shown on the Drawings and Specifications for this project. In addition, all work shall be performed in accordance with the contract documents, including Addenda (if any) and written modifications issued after execution of this agreement and as directed by the Project Manager in accordance with the expressed or obvious intent of the Contract hereinafter called Contract Documents, "**BID#26B004/LR, REPLACEMENT OF SEMINOLE LIFT STATION AND DEMOLITION OF BAYVIEW LIFT STATION**". Any Federal, State, or Local regulatory requirements shall apply and be followed by the Contractor and any Subcontractor, to include but not limited to FDOT Specifications for Road & Bridge Construction.
3. **CONTRACT DOCUMENTS:** The Contract Documents on which this agreement between the City and Contractor is based, which contains the plans and specifications in accordance with which the work is to be done, are attached, and incorporated as if fully set out herein and include the following:
   A. The standard solicitation book and specifications titled "**26B004LR Replacement of Seminole Lift Station and Demolition of Bayview Lift Station**", which is attached hereto as **Exhibit 1** and includes the following:

23. Notice to Bidders	24. Non-collusion Affidavit Form
25. Instruction to Bidders	26. Release of Lien (Partial/Final) Form
27. Price proposal Form	28. Bidder Qualification Questionnaire
29. Affidavit	30. General Conditions
31. Scope of Services	32. Specifications/Drawings

33. Public Entity Crime Form	34. Form of Non-Collusion Affidavit
35. Certificate-Contract Execution	36. Foreign Disclosure Form
37. Certification of Bidder Regarding EEO	38. E-Verify
39. Certificate Regarding Debarment Suspension, Ineligibility and Voluntary Exclusion	40. Copy of Business Tax Receipt & State of Florida Registration
41. Certification Regarding Lobbying	20. Scrutinized Companies
21. Drug-Free Workplace Form	DEP Contract Certification Form _ **Attachment A** Coronavirus State and Local Fiscal Recovery Funds Special Provisions **Attachment 8**

B. Plans and specifications as provided by CDM Smith.

C. Contractor's bid submittal _____, attached hereto as Exhibit 2 with all related documents, addenda if any, and other documents listed in the Contract Documents, and written modifications issued after execution of this Contract, if any.

D. This Construction Contract.

i. INTENT: The Scope of Work is an integrated part of the Contract Documents and as such do not stand alone if used independently. These documents establish minimum standards of quality for the Contract. The intent of the Contract Documents is to set forth requirements of performance. It is also intended to include all supervision, labor, materials, equipment, tools, and transportation necessary for the proper execution of the Work, to require complete performance of the Work despite omission of specific reference to any minor component part and to include all items necessary for the proper execution and completion of the Work by the Contractor. Performance by the Contractor shall be required only to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the intended results.

ii. ENTIRE AND SOLE AGREEMENT: Except as specifically stated herein, the Contract Documents constitute the entire agreement between the parties and supersede all other agreements, not specifically set forth in the Contract Documents. Neither party has in any way relied, nor shall in any way rely, upon any oral or written agreements, representations, warranties, statements, promises or understandings not specifically set forth in the Contract

Documents.

iii. AMENDMENTS: The parties may modify this Contract at any time by written agreement. Neither the Contract Documents nor any term thereof may be changed, waived, discharged, or terminated orally, except by an instrument in writing signed by the party against which enforcement of the change, waiver, discharge, or termination is sought.

4. **COMPENSATION AND PAYMENTS:** For satisfactory performance of the Work, the City will pay the Contractor the total sum of _____ Dollars ($). Payment shall be made for all Work completed by the Contractor during each calendar month which has been accepted by the City and properly documented. Payments shall not be made for Work deemed incomplete or deficient by the City Project Manager. At the end of each month the Contractor shall submit an invoice with supporting documentation of all Work completed for that month, to the Project Manager for approval and payment.

The City shall make partial payments to the Contractor on the basis of a duly certified and approved Pay Application, also referred to as invoice, for the Work performed during the preceding calendar month by the Contractor, **less five percent (5%)** of the amount of such pay application request which is to be retained by the City until all Work has been performed strictly in accordance with the Contract and until such Work has fully been accepted by the City.

When Contract Time is approaching Substantial Completion, a pre-final inspection shall be conducted. Within 30 calendar days after reaching substantial completion, the City shall generate a single list (Punchlist) of items required to render complete, satisfactory, and acceptable the construction services purchased by the City. The Contractor will enter the estimated cost to complete each item on the list and return to the City within ten (10) calendar days. The City reserves the right to modify costs, as deemed reasonable, and finalize the Punchlist within five (5) calendar days.

Within twenty (20) business days after developing the Punchlist, and after receipt of a proper invoice or payment request, the City will pay the Contractor the remaining balance of the Contract, including all remaining retainage withheld by the City pursuant to Section 255.078, Florida Statutes, less an amount equal to one hundred fifty percent (150%) of the estimated cost to complete the items on the list.

Upon the City's acceptance of the Work covered by this Contract and the receipt and acknowledgment by the City of a proper maintenance bond and as built plans, and submission by the Contractor, of evidence satisfactory to the City that all payrolls, material bills, and other costs incurred by the Contractor in connection with the construction of the Work have been paid in full, and also, after all guarantees that may be required are provided, final payment (for retainage duly invoiced) on account of this Contract shall be made within twenty-five (25) days after receipt of a proper pay application request by the City's Project Manager, pursuant to the Prompt Payment Act (Section 218.735 of the Florida Statutes) and all general conditions hereof.

A. **CLAIMS** – Claims arising from changes or revisions made by the Contractor at the City's request shall be presented to the City before Work starts on the changes or revisions. If the Contractor deems that extra compensation is due for Work not covered herein, or in any Supplemental Agreement, the Contractor shall notify the City in writing of its intention to make claim for extra compensation before Work begins on which the claim is based. If such notification is not given and the City is not afforded by the Contractor a method acceptable to the City for keeping strict account of actual cost, then the Contractor hereby waives its request for such extra compensation. The City is not obligated to pay the Contractor if the City is not notified as described above. The Contractor may refuse to perform the additional Work requested by the City until the parties execute an appropriate Contract. Such notice by the Contractor and the fact that the City has kept account of the costs as aforesaid shall not in any way be construed as providing the validity of the claim.

B. **RELEASES** – When it is determined, as a result of a joint inspection of the Work by the Contractor and City, that the Work has been completed in accordance with the terms of the Contract Documents, the completion of the Work shall be certified by the City. At that time, the Contractor may submit the Contractor's final request for payment. Prior to final payment, the Contractor shall execute and deliver to the City a Contractor's Affidavit and Release of Claim for all claims against the City arising under or by virtue of the Contract. Also, from each supplier or subcontractor who has notified the City of their right to file a claim (Notice to City) or who is listed in the Contractor's Affidavit and Release of Claim as an unpaid potential claimant, a Claimant's Sworn Statement of Account, executed by the supplier or subcontractor, must be attached to

each request for payment.

The Purchasing & Contracting Administrator shall be the final authority as to the appropriateness of any payment submittal. The Purchasing & Contracting Administrator's decisions on payment matters shall be made in accordance with the word of the contract, City policies, and legal requirements.

C. Appeals – Appeals of the Purchasing & Contracting Administrator's decisions shall be posted as follows:

City Manager
City of Titusville
P.O. Box 2806
Titusville, FL 32781-2806

The Contractor agrees to an administrative hearing within the scope of the contract.

5. **CHANGE ORDERS:** The City reserves the right to make such changes in the Plans and/or Specifications within the general scope of the Contract at any time by written Change Order in accordance with the General Conditions of the solicitation book.

The City Manager or designee is authorized to approve Change Order(s) provided that the amount(s) of such Change Order(s) do not increase the authorized contract amount. Furthermore, for any Change Order(s) that will increase the authorized contract amount, the City Manager is authorized to approve, whichever is greater, up to $25,000.00 or ten percent (10%) of the latest contract amount, not to exceed $50,000.00, provided that sufficient budgeted funds are available for this project.

6. **PROJECT SCHEDULE/TIME OF COMPLETION:** The Contractor shall commence Work to be performed under this Contract upon receipt of written Notice to Proceed from the City's Project Manager. The Contractor shall begin the Work and shall fully complete the Work in accordance with the Contract documents within ____ () consecutive calendar days after the commencement date stipulated in said written notice and as set forth in the contract award.

The Contractor shall perform all Work under this Contract in a timely manner consistent with the assignment schedules as mutually agreed upon by the City and the Contractor. No extension of time shall be valid unless given in writing by the City. No monetary compensation shall be given for such delay.

A delay beyond the Contractor's control may entitle the Contractor to an extension of time in which to complete the Work as determined by the City provided, however, the Contractor shall

immediately give written notice to the City of the cause of such delay. Contract time shall not be extended for "Rain Day" delays. The City will continually monitor the effects of weather and, when found justified. The City will require the Contractor to submit a request for additional time due to the effects of weather. The City will grant time extensions, on a day for day basis, for delays caused by the effects of rains or other inclement weather conditions related adverse soil conditions that prevent the Contract from productively performing controlling items of work resulting in:

1. The Contractor being unable to work at least 50% of the normal workday on pre-determined controlling work items; or
2. The Contractor must make major repairs to work damaged by weather, provided that the damage is not attributable to the Contractor's failure to perform or neglect: and provided that the Contractor was unable to work at least 50% of the normal workday on pre-determined controlling work items. No additional compensation will be made for delays caused by the effects of inclement weather.

"Rain day" requests must be submitted at the end of each work week or be waived, and the cumulative "rain day" extensions granted shall be processed as a Change Order with each pay submittal.

The City shall have the authority to suspend the Work wholly or in part, for such periods as may be deemed necessary and for whatever cause, by sending written notice of suspension to the Contractor. If the Contractor or the City shall become aware of any condition that may be cause for suspension of the Work, they shall immediately advise the concerned parties of such condition. The Contractor shall not suspend operations under the provisions of this paragraph without the City's written permission. In the event the City suspends the Work, the Contractor shall be granted an extension of time to complete the Work for as many calendar days as the Work was suspended; except that the Contractor will not be granted an extension of time to complete the Work if the suspension was caused by a fault of the Contractor.

7. **LIQUIDATED DAMAGES:** It is mutually agreed that time is of the essence in this Contract and should the Contractor fail to complete the Work within the specified time within the Notice to Proceed, or any authorized extension thereof, there shall be deducted from the compensation otherwise to be paid to the Contractor, and the City will retain the amount of $___ per consecutive calendar day as fixed, agreed, and liquidated damages for each calendar day elapsing beyond the

specified time for completion or any authorized extension thereof, which sum shall represent the actual damages which the City will have sustained by failure of the Contractor to complete the Work within the specified time, it being further agreed that the said sum is not a penalty, but is the stipulated amount of damages sustained by the City in the event of such default by the Contractor.

For the purpose of this Section, the day of final acceptance of the Work shall be considered a day of delay, and the scheduled day of completion of the Work shall be considered a day scheduled for production.

The Contractor shall consider all contingent Work which has to be done by other parties, arising from any cause whatsoever, and shall not plead their want of knowledge of said contingent Work as an excuse for delay in their Work, or for the non-performance.

Permitting the Contractor to continue and finish the Work or any part of it after the expiration of the number of calendar days allowed for completion or after any extension of time, shall in no way operate as a waiver on the part of the City of its rights under this Contract. In case of default of the Contract and the completion of the Work by the City as hereinafter provided, the Contractor and their Surety shall be liable for the liquidated damages under the Contract; but no liquidated damages shall be assessed for any delay in the final completion of the Work by the City due to any unreasonable action, negligence, omission, or delay of the City.

If any suit for the collection of, or involving the assessment of liquidated damages, the reasonableness of the amounts stipulated in the foregoing calculations shall be presumed. The liquidated damages referred to herein are intended to be and are accumulative and shall be in addition to every other remedy now or hereafter enforceable by law, in equity, by Statute, or under the Contract.

8. **CONTRACTOR'S ACCEPTANCE OF CONDITIONS:** The Contractor hereby agrees that they have carefully examined the surface of the site and has made sufficient tests or other necessary subsurface investigations to fully satisfy themself that such site is a correct and suitable one for this Work and they assume full responsibility therefore. The provisions of this Contract shall control any inconsistent provision contained in the specifications. All Drawings and Specifications have been read and carefully considered by the Contractor, who understands the same and agrees to their sufficiency for the Work to be done. It is expressly agreed that under no circumstances, conditions or situations shall this Contract be more strongly construed against the

City than against the Contractor and their Surety.

Any ambiguity or uncertainty in the Drawings or Specifications shall be interpreted and construed by the City's Engineer, and their decision shall be final and binding the Contractor.

It is distinctly understood and agreed that the passing, approval and/or acceptance of any part of the Work or material by the City, its consulting Engineer/Architect or by any agent or representative as in compliance with the terms of the Contract and/or the Drawings, and Specifications covering said Work, shall not operate as a waiver by the City of strict compliance with the terms of this Contract, and/or the Drawings and Specifications covering said Work; and the City may require the Contractor and/or their Surety to repair, replace, restore and/or make to comply strictly with this Contract and the Drawings and Specifications any and all of said Work and/or materials which within a period of one year from and after the date of the passing, approval, and/or acceptance of any such Work or material, are found to be defective or to fail in any way to comply with this Contract or with the Drawings and Specifications. This provision shall not apply to materials or equipment normally expected to deteriorate or wear out and become subject to normal repair and replacement before their condition is discovered. The Contractor shall not be required to do normal maintenance work under the guaranteed provisions. Failure on the part of the Contractor and/or their Surety, immediately after notice to either, to repair or replace any such defective materials and Workmanship shall entitle the City, if it sees fit, to replace or repair the same and recover the reasonable cost of such replacement and/or repair from the Contractor and/or their surety, who shall in any event be jointly and severally liable to the City for all damage, loss and expense caused to the City by reason of the Contractor's breach of this Contractor and/or their failure to comply strictly with the Contract and with the Drawings and Specifications.

9. **PROJECT MANAGER:** The City shall designate a Project Manager. All Work done shall be subject to the review of the City's Project Manager or designee. Any and all technical questions, which may arise as to the quality and acceptability of materials furnished, work performed or work to be performed, interpretation of the specified requirements and all technical questions as to acceptable fulfillment of the Contract on the part of the Contractor shall be referred to the Project Manager who will resolve such questions.

The Work shall be subject at all times to review by the City. The City shall be allowed access to all parts of the Work and shall be furnished with such information and assistance by the

Contractor as is required to make a complete and detailed review. The City shall not be responsible for the acts or omissions of the Contractor. Any changes to the scope of work or any deviations from the contract documents must be approved in writing through the Project Manager and Purchasing & Contracting Administrator.

10. CONTRACTOR'S DUTY & PERFORMANCE: Contractor's services will meet the minimum level of care and skill ordinarily used by members of Contractor's occupation/profession performing the type of services provided herein within the State of Florida.

Contractor shall supervise and direct the Work, using Contractor's best skill and attention. Contractor shall be solely responsible for and have control over assembly means, methods, techniques, sequences, and procedures, and coordinating all portions of the Work under this Contract, unless the Contract Documents give other specific instructions concerning these matters.

Failure to fully perform to the requirements specified herein in an effective and timely fashion will be unacceptable to the City and upon notice from the Project Manager or designee, the Contractor agrees to implement immediate corrective measures.

Unless otherwise provided in the Contract Documents, Contractor shall provide and pay for labor, materials, equipment, tools, transportation, and other facilities and services necessary for the proper execution and completion of the Work, whether temporary or permanent and whether incorporated or to be incorporated in the Work.

Unless otherwise provided in the Contract Documents, Contractor shall pay all sales, use, and other similar taxes.

Contractor shall hold and maintain at all times during the term of this Contract all federal, state, and local licenses necessary to perform the Work under the Contract.

Cleanup - The Contractor shall at all times keep the premises free from accumulation of waste materials or rubbish caused by its employees or Work. At the completion of the Work, the Contractor shall remove all their rubbish, tools, scaffolding and surplus materials and shall leave the work area "broom clean" or its equivalent, unless more exactly specified, and shall insure that all debris and other unsightly objects are removed and disposed of in a satisfactory manner. At no additional expense to the City, the Contractor will restore to their original conditions or better, as nearly as practicable, those portions of the site not designated for alteration and all such

property, structure, utilities, landscaping, etc., disturbed or damaged during the prosecution of the Work. Final payment will be withheld until such clean up and repairs are completed.

The Work will be considered complete only after all debris and unused material due to or connected with the Work have been removed and the surrounding area left in a condition satisfactory to the City. In the event the City finds that the Contractor has not complied in keeping the job site clean, the City may, after twenty-four (24) hours written notice to the Contractor to correct the situation, elect to have the job site cleaned by an independent labor force. The cost of cleaning by said independent labor force shall be deducted from the monies due the Contractor.

11. CONTRACTOR'S RESPONSIBILITY FOR WORK: Until acceptance of Work by the City, the Work shall be under the charge and care of the Contractor, and he shall take every necessary precaution against damage to the Work by action of the elements or form any other cause whatsoever, whether arising from execution or from the non-execution of the Work. The Contractor shall reprint, repair, restore, and make good, without additional compensation, all damage to any portion of the Work occasioned by any cause, other than the sole and active negligence of the City, before its completion and acceptance.

Materials and equipment shall be stored so as to incur the preservation of their quality and fitness for the Work. When considered necessary, they shall be placed on wooden platforms or other hard clean surfaces, and not on the ground, and/or they shall be placed under cover. Stored materials and equipment shall be located so as to facilitate prompt inspection.

12. UNCONTROLLABLE CIRCUMSTANCES ("FORCE MAJEURE"):

Contractor shall not be subject to any liability for failure to carry out any of the terms of this Contract to the extent that such failure shall be due to a Force Majeure event, as defined herein. Contractor shall not be relieved from liability for failures that are due to a Force Majeure event that could have been reasonably foreseen and guarded against so as to avoid or reduce the adverse impact of such event. Force Majeure includes but is not limited to any of the following if reasonably beyond the control of the Contractor claiming Force Majeure: (a) the operation and effect of rules, regulations, or orders promulgated by any commission, county, municipality, or governmental agency of the state of Florida or the United States, (b) a restraining order, injunction, or similar decree of any court of competent jurisdiction, (c) war, (d) flood, (e) earthquake, (f) fire, (g) severe wind storm, (h) acts of public disturbance, (i) quarantine restrictions, (j) epidemics, (k) strikes, (l) freight embargoes, or (m) sabotage, or any other cause

(whether or not of kinds specifically mentioned herein) that is not reasonably within the control of the Contractor claiming Force Majeure. Contractor shall be entitled only to extensions of the Contract Time as the sole and exclusive remedy for such resulting delay, in accordance with and to the extent specifically provided above.

13. **SUBCONTRACTS AND ASSIGNABILITY:** The Contractor shall not assign any interest in the Contract and shall not transfer any interest in the same without the prior written consent of the City. Any subcontracts or other work which is performed by persons or firms other than the Contractor under this Contract or any work orders shall have prior written approval of the City. Any subcontracts, outside associates, or other Contractors required by the Contractor in connection with services covered by this Contract must be specifically approved by the City, thereby:
    A. Thereby approval will be given only after the Surety on the Contract Bond has informed the City in writing that it approves of such assignment being made.
    B. In the event the Contractor shall undertake to assign all or any part of any monies due or to become due under the Contract, the instrument of assignment shall contain a provision substantially to the effect that it is agreed that the right of the assignee in and to any of such monies shall be subject to the prior liens of all persons for services rendered or materials supplied for the performance of all Work embraced by the Contract.
14. **INDEPENDENT CONTRACTOR:** Contractor is an independent contractor. Neither Contractor nor Contractor's employees are employees of the City. Contractor shall have the right to control and direct the means and methods by which the Work is accomplished. Contractor may perform services for others, which solely utilize Contractor's facilities and do not violate any confidentiality requirements of this Contract. Contractor is solely responsible for compliance with all labor and tax laws pertaining to Contractor, its officers, agents, and employees, and shall indemnify and hold the City harmless from any failure to comply with such laws. Contractor's duties with respect to Contractor, its officers, agents, and employees, shall include, but limited to:
    A. Providing Worker's Compensation coverage for employees as required by law; and
    B. Hiring of any employees, assistants, or subcontractors necessary for performance of the

Work; and

C. Providing any and all employment benefits, including, but not limited to, annual leave, sick leave, paid holidays, health insurance, retirement benefits, and disability insurance; and

D. Payment of all federal, state, and local taxes income, or employment taxes, if Contractor is not a corporation, self-employment, Social Security taxes; and

E. Compliance with the Fair Labor Standards Act, 29U.S.C. §§201. Et. Seq., including payment of overtime in accordance with the requirements od said Act; and

F. Providing employee training for all functions necessary for performance of the Work; and

G. Providing equipment and materials necessary to the performance of the Work; and

H. Providing office or other facilities for the performance of the Work.

In the event the City provides training, equipment, materials, or facilities or otherwise facilitates performance of the Work, this shall not affect any of the Contractor's duties hereunder or alter Contractor's status as an independent contractor.

15. PROTECTION OF PERSON AND PROPERTY: The Contractor shall exercise precaution at all times for the protection of persons and property. The Contractor and all subcontractors shall strictly comply with all safety provisions of all applicable laws and ordinances and shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the Work in accordance with the U.S. Department of Labor Occupational Safety and Health Act and the laws of the State of Florida. Failure to comply with the Act constitutes a failure to perform on behalf of the Contractor. This Contract requires that the Contractor and any subcontractors hired by the Contractor agree to reimburse the City for any fines and/or court cost arising from penalties charged to the City for violations of OSHA committed by the Contractor or any subcontractor.

The Contractor shall take all reasonable precautions for the safety of, and shall provide all reasonable protection to prevent damage, injury or lost to, all employees on the Work and all other persons who may be affected thereby; all the Work materials and equipment to be incorporated therein, whether in storage on or off the project site or adjacent thereto, including vehicles and equipment therein, trees, shrubs, lawn, walks, pavements, structures, and utilities including, but not limited to, fire hydrants, swales, gutters, sewer inlets, drainage ditches, etc.

Contractor shall insure that its contract Work does not impair the proper functioning of these utilities.

The Contractor shall perform any Work and shall furnish and install materials and equipment necessary during an emergency endangering life or property. In all cases, the Contractor shall notify the City Project Manager of the emergency as soon as practicable but shall not wait for instruction before proceeding to properly protect both life and property.

The City has the right to order the Contractor to discontinue hazardous work practices upon verbal or written notice. It is required that the Contractor keep and maintain all necessary protective devices in place and in proper condition at all times where Work is being performed, to prevent injury to person or damage to public or private property.

The Contractor shall be held responsible for such safety and protection until final written acceptance of the Work is issued by the City.

16. INDEMNIFICATION & INSURANCE:

A. **INDEMNIFICATION** - The Contractor shall indemnify, save harmless and defend the City and all of its officers, agents, and employees from all claims, actions or suits, including reasonable attorney's fees, because of any injury or damage sustained by any person or property because of the said Contractor's operations relating to this contract; or because of or in consequence of any neglect causing bodily injury, illness, or death, or property damage; or through the use of unacceptable materials in constructing the Work; or on account of or in consequence of any neglect in safeguarding the work; or because of any act or omission by said Contractor or that of a subcontractor, or anyone employed by them, or for whose acts Contractor or a subcontractor may be liable; or because of any claims or amounts recovered from any infringement or patent, trademark or copyright; or from any claims or amounts arising or recovered under Workers Compensation Law or any other laws.

Should the Contractor fail to maintain adequate protection for the City a portion of the money due the Contractor under the Contract, as may be considered necessary by the Purchasing & Contracting Administrator, may be retained for use by the City to address all such claims. In case no money is due, the Contractor's Surety shall be held until such suit(s), action(s), or claim(s) for damage(s) or injury(ies) as aforesaid, shall have been settled and suitable evidence to that effect furnished to the Purchasing & Contracting Administrator. The exception being that money due the Contractor will not be withheld under this provision when

the Contractor produces satisfactory evidence that he has, in the opinion of the City, adequate insurance coverage.

The Contractor guarantees the payments of all just claims for materials, supplies, tools, labor, and other just claims against him or any subcontractor in connection with this Contract. The Contractor's bond will not be released by final acceptance and payment by the City unless all such claims are paid or released. Final waivers of liens for all subcontractors shall be provided to the Purchasing & Contracting Administrator in a timely manner after request for a final inspection.

B. **INSURANCE** - The Contractor shall not commence Work under this Contract until he has obtained and provided insurance of the character specified in the Contract Documents and in such amounts that will provide adequate protection to the City and the Contractor against all Liabilities, damages, and accidents, nor shall he commence Work until such insurance has been approved by the City. The Contractor shall not allow any Subcontractor to commence on their subcontract until all insurance required of the subcontract has been obtained and approved in the same manner. Neither the approval by the City nor a failure to disapprove insurance furnished by the Contractor or Subcontractor release the Contractor or Subcontractor of full responsibility for liability, damages, or accidents.

The Contractor and each Subcontractor shall maintain such required insurance during the life of the Contract, and no modification or change of insurance coverage and/or provision shall be made without thirty (30) days advance notice to the City. Coverage shall be as follows:

1) Commercial General Liability Insurance coverage on an occurrence basis in the minimum amount of $1,000,000 per occurrence and $2,000,000 policy aggregate (defense cost shall be in excess of the limit of liability). Coverage shall include premises and operations, products and completed operations, personal injury and advertising liability and medical payments. The City shall be named as an Additional Insured.
2) Auto Liability Insurance, covering all vehicles, owned or otherwise, used in connection with this contract, with a minimum combined single limit of $1,000,000, including hired and non-owned liability and $25,000 medical payment.
3) Workers' Compensation and Employers Liability Insurance Workers Compensation insurance providing statutory benefits as required in the State of Florida. The Contractor shall require any subcontractor(s) to provide evidence of this coverage. Workers'

Compensation exemption forms are only accepted for independent contractors and sole proprietorships that perform the work or services required of the City themselves, they shall not have employees or sub-contract the work to other entities or individuals. Additionally, if the contract requires working on or around a navigable waterway, the Contractor and all subcontractors shall provide evidence of United States Longshoremen's and Harbor Workers (USL&H) coverage and contingent coverage of Jones Act (Marine Employers Liability) in compliance with Federal statutes or proof of exemption. The Contractor shall be responsible for compliance with these requirements by each subcontractor, Contractor or supplier when applicable. All workers' compensation policies must include coverage for employer liability of $500,000 for each accident and each disease.

4) In the event that the contract involves professional or consulting services, in addition to the aforementioned insurance requirements, the Contractor shall also be protected by a Professional Liability Insurance Policy (Errors and omissions, Directors and Officers, Architect and Engineers, Etc.) in the amount of $2,000,000 per claim.

5) In the event the contract involves services related to construction projects, the Contractor shall also procure and maintain a Builders Risk Insurance Policy or Installation Floater with loss limits equal to the value of the construction project.

6) In addition to the above, Specialty Insurance policies covering specific risks of loss (including but not limited to, for example; Longshore coverage, Crane and Rigging, Inland Marine, etc.) may be required by City Risk Management. Any additional specialty insurance coverage requirement will be dictated by the specific goods, products or services provided under the subject contract and insurance underwriting standards, practices, procedures or products available in the commercial insurance market at the time of the contract inception. The Contractor is required to procure and maintain all such specialty coverage in accordance with prudent business practices within the Contractors industry.

The awarded Contractor shall have five (5) days to provide certificates of insurance to the City demonstrating that the aforementioned insurance requirements have been met prior to the commencement of work under this contract. The certificate(s) of insurance (COI) shall indicate that the policies have been endorsed to cover the City as an additional insured (a waiver of subrogation in lieu of additional insured status on the workers' compensation policy is acceptable) and that these policies may not be canceled or modified without thirty (30) days

prior written notice to the City. The insurance coverage enumerated above constitutes the minimum requirements and shall in no way lessen or limit the liability of the Contractor under the terms of the contract. Subcontractor's insurance shall be the responsibility of the Contractor.

17. BONDS:

A. **PERFORMANCE AND PAYMENT BONDS** – Pursuant to stipulations hereto, a performance and payment bond, on the prescribed form and equal to 100% of the contract amount will be required for this Contract prior to any commencement of Work.

B. **MAINTENANCE BOND** – A maintenance bond, equal to ten percent (10%) of the final contract amount will be required pursuant to the Contract Documents hereto in form acceptable to the City Attorney

C. **ADDITIONAL BONDS** – It is further agreed between the parties hereto, that if at any time after the execution of this Contract and the Performance Bond hereto attached for its faithful performance, the City shall deem the surety or sureties upon such bond to be unsatisfactory, or if, for any reason, such bond ceases to be adequate to cover the performance of the Work, within five (5) days after receipt of notice from the City to do so, the Contractor shall, at their own expense, furnish an additional bond or bonds in such form and amount, and with such surety or sureties as shall be satisfactory to the City.

18. GENERAL PERSONNEL: The Contractor represents that it will secure at its own expense all personnel and subcontractors required for services, which are necessary to complete the Work as described in this Contract. All services under this Contract shall be performed by the Contractor or subcontractor and all persons engaged in work under the Contract shall be qualified to perform such services and authorized under federal, state, and local laws to perform such services. Personnel who perform services under this Contract shall not be employees of the City.

All workers must have sufficient knowledge, skill, and experience to perform properly the work assigned to them. Any worker including supervisors, employed by the Contractor or subcontractor who, in the opinion of the City does not perform Work under this Contract in a skillful manner, or appears to be incompetent or to act in a disorderly or intemperate manner shall, at the written request of the City, be discharged immediately and shall not be employed again in any portion or the Work without the approval of the City.

The Contractor shall at all times be responsible for the conduct and discipline of their employees and/or any subcontractor or persons employed by subcontractors. The Contractor shall

provide a current listing of names and license numbers of all personnel executing Work related to this contract. This listing shall be updated by the Contractor within three days of a personnel change.

19. **EQUAL OPPORTUNITY EMPLOYER:** The City is an Equal Opportunity Employer (EOE) and as such encourages all contractors to voluntarily comply with EOE regulations with regards to gender, age, race, veteran status, country of origin, and creed. Any subcontracts the Contractor may enter into shall make reference to this clause with the same degree of application being encountered. When applicable the Contractor shall comply with all State or Federal EOE regulations.

20. **DRUG-FREE WORKPLACE:** The City of Titusville encourages all contractors to maintain a drug-free workplace program in accordance with Section 287.087 of the Florida Statutes.

21. **PUBLIC ENTITY CRIME:**

The Contractor shall file a sworn statement with the City, which is provided under Contract Forms, stating whether a person or affiliate as defined in Section 287.133(1), Florida Statutes, has been convicted of a public entity crime subsequent to October 1, 1989, in accordance with the provisions of Section 287.133 of the Florida Statutes.

22. **E-VERIFY:** As a condition precedent to entering into a Contract as a result of this bid/proposal, and in compliance with Section 448.095, Florida Statutes, Contractor, and its subcontractors shall, register with and use the E-Verify system to verify work authorization status of all employees hired after January 2, 2021.

    1) The City shall not enter into, or renew, a contract with a Contractor that is not enrolled in E-Verify. Any Contractor that has a contract with the City shall be contractually obligated to utilize E-Verify to confirm the employment eligibility of any employee hired during the contract term. The Contractor shall provide the City acceptable evidence of their enrollment at time of execution of the contract or renewal. Acceptable evidence shall include, but not be limited to, a copy of the fully executed E-Verify Memorandum of Understanding for the Business.
    2) Contractor shall require of its subcontractors to provide Contractor with an affidavit stating that the subcontractor does not employ, contract with, or subcontract with an unauthorized alien. Contractor shall maintain a copy of the subcontractor's affidavit as part of and pursuant to the records retention requirements of this Contract.

3) The City, Contractor, or any subcontractor who has a good faith belief that a person or entity with which it is contracting has knowingly violated Section 448.09(1), Florida Statute or the provision of this section shall terminate the contract with the person or entity.

4) The City, upon good faith belief that a subcontractor knowingly violated the provisions of this section, but Contractor otherwise complied, shall promptly notify Contractor and Contractor shall immediately terminate the contract with the subcontractor.

5) A contract terminated under the provisions of this section is not a breach of contract and may not be considered such. Any contract termination under the provisions of this section may be challenged pursuant to Section 448.095(2)(d), Florida Statute. Contractor acknowledges that upon termination of this Contract by the City for a violation of this section by Contractor, Contractor may not be awarded a public Contract for at least one (1) year. Contractor further acknowledges that Contractor is liable for any additional costs incurred by the City as a result of termination of any contract for a violation of this section.

6) Subcontracts: Contractor or subcontractor shall insert in any subcontracts the clauses set forth in this section, including this subsection, requiring the subcontractors to include these clauses in any lower tier subcontracts. Contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in this section.

23. <u>PROHIBITED TELECOMMUNICATIONS EQUIPMENT:</u> Contractor represents and certifies that it and its applicable subcontractors do not and will not use any equipment, system, or services that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system, as such terms are used in 48 CFR § 52.204-24 through 52.204-26. By executing this Contract, Contractor represents and certifies that Contractor and its applicable subcontractors must not provide or use such covered telecommunications equipment, system, or services for any scope of work performed for the City for the entire duration of this Contract. If Contractor is notified of any use or provisions of such covered telecommunications equipment, system, or services by a subcontractor at any tier or by any other source, Contractor must promptly report the information in 40 CFR § 52.204-25(d)(2) to City.

24. **SCRUTINIZED COMPANIES:** In accordance with Sections 287.135, Florida Statutes, prohibit state agencies departments, and local government entities from contracting with Scrutinized Companies. Contractor and Subcontractor(s) shall complete the Affidavit form provided in the bid/proposal booklet and hereby incorporated as part of the Contract Documents. Contractor and Subcontractor shall affirm not to be on the Scrutinized Companies with Activities in Sudan List, or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List created pursuant to s. 215.473, Florida Statutes, nor have business operations in Cuba or Syria and are not on the Scrutinized Companies that Boycott Israel List, created pursuant to Section 215.4725, Florida Statutes or participating in a boycott of Israel. The Contractor or Subcontractor further acknowledges and agrees that the City may immediately terminate this Contract and any subsequent renewal Contract for cause if the Contractor or Subcontractor is found to have submitted a false certification or if the Contractor or Subcontractor is placed on the Scrutinized Companies with Activities in Sudan List, the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, or the Scrutinized Companies that Boycott Israel List, or is engaged in a boycott of Israel during the Term of the Contract. Further, the Contractor or Subcontractor acknowledges and agrees that a false certification or representation hereunder is a material breach of this Contract, and the Contract shall be terminated by the City if the Contractor or Subcontractor and any actively contracted company for the Contractor or Subcontractor is found to have been placed on the Scrutinized Companies that Boycott Israel List or is engaged in a boycott of Israel.

25. **ANTI-DISCRIMINATION:** Contractor for itself, its personal representatives, successors in interests, assigns, subcontractors, and sub-leases, as a part of the consideration hereof—hereby covenants and agrees that:

    A. No person on the grounds of race, color, religion, sex, national origin, age, marital status, political affiliation, familial status, disability, sexual orientation, pregnancy, or gender identity, expression or veteran or service member status be excluded from participation in, denied the benefits of, or be otherwise subjected to discrimination in the use of or performance of services described herein; and

    B. No Employee or applicant for employment on the ground of race, color, religion, sex, national origin, age, marital status, political affiliation, familial status, disability, sexual orientation, pregnancy, gender identity or expression, or veteran or service member status

will be discriminated against during the course of employment or application for employment to be employed in the performance of this Contract with respect to hiring, tenure, terms, conditions or privileges of employment, or any matter directly or indirectly related to performance of this Contract.

26. DISCRIMINATORY VENDOR LIST: Contractor hereby acknowledges its continuous duty to disclose to the City if the Contractor or any of its affiliates, as defined by Section 287.134(1)(a), Florida Statutes, are placed on the Discriminatory Vendor List. Pursuant to Section 287.134(2)(a),Florida Statutes: "An entity or affiliate who has been placed on the discriminatory vendor list may not submit a bid, proposal, or reply on a contract to provide any goods or services to a public entity; may not submit a bid, proposal, or reply on a contract with a public entity for the construction or repair of a public building or public work; may not submit bids, proposals, or replies on leases of real property to a public entity; may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity; and may not transact business with any public entity."

27. GRATUITIES AND KICKBACKS:

A. **GRATUITIES**

It is unethical for any person to offer, give, or agree to give any employee or for any employee to solicit, demand, accept or agree to accept from another person, a gratuity or an offer of employment in connection with any decision, approval, disapproval, recommendation, preparation of any part of program requirement or a purchase request, influencing the content of any specification or procurement standard, rendering of advice, investigation, audit, or in any other advisory capacity in any proceeding or application, request for ruling, determination claim or controversy, or other particular matter, pertaining to any program requirement or a Contract or subcontract, or to any solicitation or proposal therefore.

B. **KICKBACKS**

It must be unethical for any payment, gratuity, or offer of employment to be made by or on behalf of a Sub-contractor under a Contract to Contractor or higher tier sub-contractor any person associated therewith, as an inducement of the award of a subcontract or order.

C. **CONTRACT CLAUSE**

The prohibition against gratuities and kickbacks prescribed in this section must be conspicuously set forth in every Contract and subcontract and solicitation, therefore.

28. FOREIGN GIFTS AND CONTRACTS: The Contractor must comply with any applicable disclosure requirements in Section 286.101, Florida Statutes. Pursuant to Section 268.101(7)(b), Florida Statutes: "In addition to any fine assessed under Florida Statutes 286.101(7)(a), a final order determining a third or subsequent violation by an entity other than a state agency or political subdivision must automatically disqualify the entity from eligibility for any grant or contract funded by a state agency or any political subdivision until such ineligibility is lifted by the Administration Commission.

29. ANTITRUST VIOLATIONS; DENIAL OR REVOCATION: Pursuant to Section 287.137, Florida Statutes, as may be amended, a person or an affiliate who has been placed on the antitrust violator vendor list (electronically published and updated quarterly by the State of Florida) following a conviction or being held civilly liable for an antitrust violation may not submit a bid, proposal, or reply for any new contract to provide any goods or services to a public entity; may not submit a bid, proposal, or reply for a new contract with a public entity for the construction or repair of a public building or public work; may not submit a bid, proposal, or reply on new leases of real property to a public entity; may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a new contract with a public entity; and may not transact new business with a public entity. By entering this Contract, Contractor certifies neither it nor its affiliate(s) are on the antitrust violator vendor list at the time of entering this Contract. False certification under this paragraph or being subsequently added to that list will result in termination of this Contract, at the option of the City consistent with Section 287.137, Florida Statutes, as amended.

30. ENVIRONMENTAL AND SOCIAL GOVERNMENT AND CORPORATE ACTIVISM:

Pursuant to Florida Statute 287.05701, local governments cannot give preference to a contractor based on social, political or ideological interests such as those listed directly below. Contractors are also prohibited from giving preference to subcontractors based on the below listed factors. Violations will result in termination of this Contract and may result in administrative sanctions and penalties by the Office of the Attorney General of the State of Florida.

A. The Contractor's political opinions, speech, or affiliations.

B. The Contractor's religious beliefs, religious exercise, or religious affiliations.

C. The Contractor's lawful ownership of a firearm.

D. The Contractor's engagement in the lawful manufacture, distribution, sale, purchase, or use of firearms or ammunition.

E. The Contractor's engagement in the exploration, production, utilization, transportation, sale, or manufacture of fossil fuel-based energy, timber, mining, or agriculture.

F. The Contractor's support of the state or Federal Government in combatting illegal immigration, drug trafficking, or human trafficking.

G. The Contractor's engagement with, facilitation of, employment by, support of, business relationship with, representation of, or advocacy for any person described in this paragraph.

H. The Contractor's failure to meet or commit to meet, or expected failure to meet, any of the following as long as such Contractor is in compliance with applicable state or federal law:

1. Environmental standards, including emissions standards, benchmarks, requirements, or disclosures;
2. Social governance standards, benchmarks, or
3. requirements, including, but not limited to, environmental or social justice;
4. Corporate board or company employment composition standards, benchmarks, requirements, or disclosures based on characteristics protected under the Florida Civil Rights Act of 1992; or
5. Policies or procedures requiring or encouraging employee participation in social justice programming, including, but not limited to, diversity, equity, or inclusion training.

31. NON-APPROPRIATIONS: This Contract will remain in full force and effect only as long as the expenditures provided for the Contract have been appropriated by the City Council in the annual budget for each fiscal year of the Contract, and is subject to termination without penalty if funding is not appropriated.

32. SEVERABILITY: If any clause or provision of this contract is found illegal, invalid, or unenforceable under present or future laws effective during the Term of this Contract, then and only in that event, it shall be the intention of the parties that the remainder of this Contract, and

the Term covered thereby, shall not be affected. All rights, powers, and privileges conferred by this Contract upon the Parties shall be cumulative but not restricted to those given by law.

33. TERMINATION:

A. **TERMINATION FOR CAUSE:** The Contract may be terminated by the City for cause in the event of any breach hereof, including but not limited to, Contractor's:

1. Failing to carry forward and complete Work in accordance with the requirements hereof; or
2. Failing to comply with applicable laws, regulations, permits, or ordinances'; or
3. Failing to timely commence or continuously and vigorously pursue correction of defective Work; or
4. Making a general assignment for the benefit of its creditors; or
5. Having receiver appointed because of insolvency; or
6. Filing bankruptcy or having a petition for involuntary bankruptcy filed against it; or
7. Failing to make prompt payments, when properly due, to subcontractors, vendors, or others for materials or labor used in the Work; or
8. Making material misrepresentation to the City regarding Work or performance thereof.

The City shall provide Contractor with written notice of its intention to terminate this Contract for cause, which shall provide the effective date of the termination. Such notice shall state the nature of the deficiency and, at the City's sole judgment and discretion, may afford Contractor an opportunity to correct said deficiency, in which event the notice shall specify the time allowed to cure said deficiency. If the deficiency has not been corrected within the time allotted, the City may take possession of the Work and finish the Work by whatever method(s) the City deems expedient. In such case, Contractor shall not be entitled to receive any further payment until the Work is completed and accepted by the City. If the unpaid balance of the total compensation exceeds the expense of completing Work, including compensation for additional managerial and administrative services, the excess will be paid to Contractor. If the expense exceeds the unpaid balance, Contractor shall pay the difference to the City. The expense incurred by the City and the damage incurred through Contractor's default will be certified by the City.

B. **TERMINATION FOR CONVENIENCE:** Notwithstanding any other provision of this Contract, the City may terminate this Contract, or any Work issued under it, in whole or in part, at any time, with or without cause, upon ten (10) days written notice to the Contractor.

Upon receiving notice of termination, the Contractor shall discontinue the Work on the date and to the extent specified in the notice and shall place no further orders for materials, equipment, services, or facilities except as needed to continue any portion of the Work that was not terminated. The Contractor shall also make every reasonable effort to cancel, upon terms satisfactory to the City, all orders or subcontracts related to the terminated Work.

In the event of such termination, the Contractor shall be compensated for any Work performed prior to the date of the termination and for materials that were ordered prior to the receipt of notice of termination that cannot be returned to the vendor. Any such materials shall become the property of the City. Contractor waives all claims for compensation in excess of that which is specially provided for herein, including but not limited to, loss of anticipated profits; idle equipment, labor, facilities; and claims of subcontractors and vendors.

C. **BANKRUPTCY:** If the Contractor shall be adjudged bankrupt; or if it should make a general assignment for the benefit of its creditors; or if a receiver should be appointed for the Contractor or any of their property; or if it should persistently or repeatedly refuse or fail to make prompt payment to a person(s) supplying labor or materials for the Work under the Contract; or persistently disregard instructions of the Purchasing & Contracting Administrator; or fail to observe or perform any provisions of the Contract Documents; or otherwise be guilty of a substantial violation of any provisions of the Contract Documents, the City may – by at least ten (10) days prior written notice to the Contractor – without prejudice to any other rights or remedies of the City under the Contract, terminate the Contractor's right to proceed with the Work. In such event, the City may take over the Work and proceed with same to Completion – by Contract or otherwise – and the Contractor and its Sureties shall be liable to the City for any excess cost incurred by the City. In such case, the City may take possession of and utilize in completing the Work, such necessary materials, appliances, and plant as may be on the site of the Project. The foregoing

provisions are in addition to, and not in limitation of, the right of the City under any other provisions of the Contract Documents.

34. **COMPLIANCE WITH LAW:** The Contractor expressly agrees to comply with all known laws and regulations relating to providing services under this Contract. The failure of the Contractor to adhere to any known law or regulation pertaining to furnishing services under this Contract shall constitute a material breach of this Contract.

35. **CERTIFICATION OF RESTRICTION ON LOBBYING:** The Contractor agrees that no Federal appropriated funds have been paid or will be paid by or on behalf of the Contractor to any person for influencing or attempting to influence any officer or employee of any Federal agency, a member of Congress, an officer or employee of Congress or an employee of a member of Congress in connection with the awarding of any Federal contract, the making of any Federal Grant, the making of any Federal loan, the entering into of any cooperative agreement and the extension, continuation, renewal, amendment or modification of any Federal contract, Grant, loan or cooperative agreement.

If any funds other than Federal appropriated funds have been paid by the Contractor to any person for influencing or attempting to influence an officer or employee of any Federal agency, a member of Congress, an officer or employee of Congress or an employee of a member of Congress in connection with any Florida Department of Transportation (FDOT) Joint Participation Agreement, the undersigned shall complete and submit Standard Form-LLL "Disclosure Form to Report Lobbying" in accordance with the instructions.

36. **GOVERNING LAW:** The laws of the State of Florida shall govern this Contract.

37. **VENUE:** In the event of any legal proceedings arising from or related to this Contract, venue for such proceedings shall be in Brevard County, Florida.

38. **WAIVER OF TRIAL BY JURY:** The parties hereto expressly waive trial by jury in any action to enforce or otherwise resolve any dispute arising hereunder.

39. **ATTORNEY'S FEES:** In the event of any legal or administrative proceedings arising from or related to this Contract, including appeals, each party shall bear its own costs and attorney's fees.

40. **CONFLICT OF INTEREST:** No officer, member or employee of the City or its designees or agents, no member of the governing body, and no other public official of the locality who

exercises any function or responsibility with respect to this contract, during his/her tenure or for two (2) years thereafter, shall have any interest, direct or indirect, in this contract or any related subcontract, or the proceeds thereof. Further, the Contractor shall cause to be incorporated in all subcontracts the language set forth in this paragraph prohibiting conflict of interest.

41. **CONFLICTING PROVISIONS:** Notwithstanding any other provision in this Contract Document, whenever any provisions in the Contract Documents are inconsistent or conflict, the stricter provision shall prevail.

42. **COVENANT AGAINST CONTINGENT FEES:** The Contractor warrants that it has not employed or retained any company or person, other than a bona fide employee working solely for the Contractor to solicit or secure this Contract and that it has not paid or agreed to pay any person, company corporation individual or firm, other than a bona fide employee working solely for the Contractor any fee, commission, or making of this Contract. For the breach or violation of this paragraph, the City shall have the right to terminate the Contract without liability and, at its discretion, deduct from the Contract price, or otherwise recover, the full amount of such fee, commission, percentage, gift or consideration.

43. **CONSTRUING PROVISIONS:** This Contract shall not be construed against the party who drafted the same, as both parties have obtained experts for their choosing to review the legal and business adequacy of the same. In any conflict between the Technical Specifications, and the General terms of this Contract, the provisions of the latter shall prevail.

44. **SEPARATE COUNTERPARTS & EXECUTION:** This Contract and any amendments hereto may be executed by the Parties individually or in any combination, in one or more counterparts, each of which shall be an original and all of which shall together constitute one and the same contract. Execution and delivery of this Contract and any amendments by the Parties shall be legally valid and effective through; (i) executing and delivering the paper copy of the documents, (ii) transmitting the executed paper copy of the documents by facsimile transmission or electronic mail in "portable document format" (",pdf") or other electronically scanned format, or (iii) creating, generating, sending, receiving, or storing by electronic means this Contract and any amendments, the execution of which is accomplished through use of an electronic process and executed or adopted by a Party with the intent to execute this Contract

(i.e. "electronic signature" through a process such as DocuSign®). In making proof of this Contract, it shall not be necessary to produce or account for more than one such counterpart executed by the Party against whom enforcement of the Contract is sought.

45. **RETENTION AND REVIEW OF RECORDS:** The Contractor and its subcontractors or suppliers shall retain all records relating to this Contract for a period of five (5) years, or as further directed by local, state, or federal regulations, from the date that the City makes final payment, and all other pending matters are closed.

    The Contractor and its subcontractors or suppliers shall make available all books, documents, papers, and records of the Contractor or its subcontractor or suppliers, which are directly pertinent to this Contract, to the City's Purchasing and Contracting Administrator or their duly authorized representative, or the U.S. Comptroller General or Inspector General, or the Auditor General, or FDEP duly authorized representative for the purpose of making an audit, inspection, review, copying, excerpts and transcriptions. The Contractor and its subcontractors will permit such representatives to interview employees on the job during working hours.

46. **AUDIT RIGHTS:** The City reserves the right to audit the records of the Contractor for the commodities and/or services provided under the contract at any time during the performance and term of the Contract and for a period of five (5) years after completion and acceptance by the City. If required by the City, the Contractor agrees to submit to an audit by an independent certified public accountant selected by the City. The Contractor must all the City to inspect, examine and review the records of the Contractor in relation to this contract at any and all times during normal business hours during the term of the Contract.

47. **PUBLIC RECORDS:** Records of the Contractor that are made or received in the course or performance of the Contractor's obligations under this Contract may be public records that are subject to the requirements of Chapter 119, Florida Statutes and accordingly Contractor shall keep and maintain public records that ordinarily and necessarily would be required by the City in order to perform the service. However, some records may be confidential or exempt from disclosure under Chapter 119, Florida Statute. In the event the Contractor receives a request for any such records, the Contractor shall notify the City and comply with Chapter 119, Florida Statute. The Contractor shall not prepare any news or press release in any way related to this Contract, without the City's written consent. Contractor hereby

agrees to comply with the following:

a. As provided in Section 119.0701, Florida Statutes, the Contractor is required to, and by executing this Contract, the Contractor agrees to:
   i. Keep and maintain public records that ordinarily and necessarily would be required by the City to perform the service.
   ii. Upon request from the City's custodian of public records, provide the City with a copy of the requested records or allow the records to be inspected or copied within a reasonable time at a cost that does not exceed the cost provided in Chapter 119.07, Florida Statutes or as otherwise provided by law.
   iii. Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized the law for the duration of the contract term and following the completion of the Contract if the Contractor does not transfer the records to the City.
   iv. Upon completion of the Contract, transfer, at no cost to the City, all public records in possession of the Contractor or keep and maintain public records as required by the City to perform the service. If the Contractor transfers all public records upon completion of the Contract, Contractor shall destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. If the Contractor keeps and maintains public records upon completion of the Contract, Contractor shall meet all applicable requirements for retaining public records. All records stored electronically must be provided to City upon request from the City's custodian of public records in a format that is compatible with the information technology systems of the City.

b. The term "public record" as used in this provision include all documents, papers, letters, maps, books, tapes, photographs, films, sound records, data processing software, or other material, regardless of physical form, characteristics, or means of transmission, made, or received pursuant to law or ordinance or in connection with the transaction of official business by the City.

IF CONTRACTOR HAS ANY QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES TO THE CONTRACTOR'S DUTY TO PROVIDE PUBLIC RECORDS RELATING

TO THIS CONTRACT, CONTACT THE CITY'S CUSTODIAN OF PUBLIC RECORDS AT 321-567-3682, wanda.wells@titusville.com, 555 S. WASHINGTON AVE., TITUSVILLE, FL 32796.

IN WITNESS WHEREOF, the parties hereto have accepted, made, and executed this Contract upon the terms and conditions above stated.

CONTRACTOR:

By: _____

Date:_____

OWNER:
City of Titusville
555 S. Washington Avenue
Titusville, FL 32796

By: _____
Andrew Connors, Mayor

Date: _____

ATTEST:

_____
Wanda F. Wells, City Clerk
Date: _____

APPROVED AS TO FORM:

_____
Andriene Treasure, City Attorney

Date: _____

APPROVED AS TO CONTENT:

_____
Tom Abbate, City Manager

Date: _____

Staff Review & Preparation:

_____Date: _____
Leslie A. Rothering, Purchasing & Contracting Administrator

_____Date: _____
Public Works Department

SECTION 3

BASIC CLAUSES

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3.1. Intent of Documents/Plans & Specifications:

The Documents, Plans & Specifications are an integrated part of the Contract Documents and as such will not stand alone if used independently, but instead establish minimum standards of quality for this Project. They do not purport to cover all details entering into the design and construction of materials or equipment. The intent of the Contract Documents is to set forth requirements of performance, type of equipment and structures, and standards of materials and construction. It is also intended to include all labor and materials, equipment, and transportation necessary for the proper execution of the Work, to require new material and equipment unless otherwise indicated, and to require complete performance of the Work in spite of omission of specific reference to any minor component part and to include all items necessary for the proper execution and completion of the Work by the Contractor. Performance by the Contractor shall be required only to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the intended results.

The Contractor will be supplied with three (3) copies of the Plans, Specifications, and other Contract Documents. He shall have available at the site at all times one copy each of said Plans, Specifications, and other Contract Documents. Additional copies can be obtained by the Contractor from the office of the Purchasing & Contracting Administrator for the cost of reproduction.

The Contract Documents are complementary; what is called for by one is as binding as if called for by all. If the Contractor finds a conflict, error, or discrepancy in the Contract Documents, he shall call it to the Purchasing & Contracting Administrator's attention in writing at once and before proceeding with the Work affected thereby, however, he will not be liable to the Owner for his failure to discover any conflict, error, or discrepancy in the specifications or drawings.

The Contract Documents cover, with explicit provisions, all matters relating to the Work which, the Contractor undertakes to construct or perform in full compliance with such provisions. It is understood that the Contractor has, by personal examination and inquiry, if necessary, satisfied himself as to all local conditions and as to the meaning, requirements and reservations of the Contract Documents, for, after the award, no deviation will be allowed from the Purchasing & Contracting Administrator's interpretation thereof.

3.2. Changes in Work:

a) The Owner reserves the right to make such changes in the Plans and/or Specifications within the general scope of the Contract at any time by a written Change Order that may be considered necessary or desirable to complete fully and acceptably the proposed construction in a satisfactory manner. In making any change, the charge or credit for the change shall be approximately determined by one of the following methods prior to the issuance of the order for the changed Work.

1) The change order shall set a total lump sum price for the change in the Work of the Contractor, including the Contractor's overhead and profit; also, the change order shall specify whether the amount is to be added to or deducted from the original contract price.

2) When the price for the Work is determined on the basis of the number of units used, estimate the number of units which are changed, multiply the estimated number of unit(s) by the price (the price shall include the Contractor's overhead and profit) and this new total shall be specified on the change order as to whether it is to be added or deducted from the original contract price.

b) The Contractor shall not proceed with the changes in the Work until a written Notice to Proceed with the change is received from the Purchasing & Contracting Administrator. The Contractor shall keep a tally of the correct amount of the costs of the changes together with all vouchers, invoices, etc., as directed by the Owner. These records shall be made available to the Owner at all times upon request.

c) Approved changes to the scope of Work may include an allowance for overhead and profit. The cost may also include all items of labor or materials such as the use of power tools, and equipment actually used. Public Liability and Workers Compensation Insurance, power, pro-rata charges for foremen, social security, old age, and unemployment insurance shall also be included. If any deductions are ordered, the credits shall be the net cost. Insurance not previously mentioned, (such as costs for bonds), superintendents, timekeepers, clerks, watchmen, use of small tools, incidental job burdens, and general office expenses are among the items that may be considered as overhead.

1) The Contractor shall, when required by the Owner, furnish to the Owner an itemized breakdown of the quantities and prices used in computing the value of any proposed change order.

2) In calculating changes, the instructions for measurement of quantities set forth in the Specifications shall be followed.

d) Should the Contractor encounter, or the Owner discover, during the progress of the Work subsurface or latent conditions at the site materially differing from those shown on the drawings or indicated in the Specifications (or conditions of an unusual nature differing materially from those ordinarily encountered and generally recognized as inherent in the Work or character provided for in the drawings and specifications), the attention of the Owner shall be called immediately to such conditions before they are disturbed (notice to be provided to the Owner in writing.) The Owner shall thereupon promptly investigate the conditions, and if he finds they do so materially differ, the Contract shall, with the written approval of the Owner, be modified to provide for any increase or decrease of cost, or difference in time resulting from such conditions.

3.3. Reserved (not used)

3.4. Delays:

Those delays that in the determination of the Purchasing & Contracting Administrator are outside the direct control of the Contractor are compensable in nature provided ample written justification is posted with and approved by the Purchasing & Contracting Administrator. The

City reserves the right to deny any requests for delay relief if the request is found invalid or without merit.

3.5. Separate Contract:

The Owner reserves the right to let other Contracts in connection with this project. The Contractor shall afford other contractors a reasonable opportunity for the introduction and storage of their materials and the execution of their Work and shall properly connect and coordinate his Work with theirs.

If any part of the Contractor's Work depends on the proper execution or results of the Work of any other contractor, the Contractor shall inspect and properly report to the Purchasing & Contracting Administrator any defect in such Work that renders it unsuitable for such proper execution and results.

The Contractor shall agree, and hereby does agree, to make no claims against the Owner for additional payment due to delays or other conditions created by the operations of such other contractors. If there is a difference of opinion as to the respective rights of the Contractor and others doing Work within the limits of or adjacent to the project, the Purchasing & Contracting Administrator will decide as to the respective rights of the various parties involved in order to secure the completion of the Owner's Work, in general harmony and in a satisfactory manner and his decisions shall be final and binding on the Contractor.

3.6. Reserved (not used)

3.7. Subcontracts:

a) The City reserves the right under this contract to approve or disapprove any proposed subcontractor.

b) The Contractor shall utilize the services of specialty subcontractors on those parts of the Work which under normal contracting practices are performed by specialty subcontractors; however, should the Owner determine that the specialty work in question has been customarily performed by the Contractor's own organization and it is competent to perform such Work, the Contractor shall be permitted to do so. Should the Owner determine that the performance of any specialty Work by the specialty subcontractors will result in substantially increased costs or inordinate delays, the requirements of this paragraph shall not apply.

c) Pursuant to 1.4.7 (a) above, the Contractor shall not award any Work to any subcontractor without prior written approval of the Owner. The Owner will not grant approval until the Contractor submits all information requested by the Owner. The Owner will attempt not to unduly delay the Contractor.

d) The Contractor shall be fully as responsible to the Owner for the acts and omissions of his subcontractors, and of persons either directly or indirectly employed by the contractor.

e) The Contractor shall cause appropriate provisions to be inserted in all subcontracts to bind subcontractors to the contractor by the terms of these General Conditions and other pertinent contract documents as applicable to the Work of the subcontractor. The Contractor shall also have provisions included in all subcontracts giving them the same powers of termination as the Owner may exercise over the Contractor under any provisions of the Contract Documents.

f) Nothing contained in this Contract shall create any contractual relation between any subcontractor and the Owner.

3.8. Assignments of Contract:

No assignment by the Contractor of the contract or any part thereof, or any monies due or to become due, shall be made without the prior written approval of the Owner. As a condition precedent to the assignment, the surety on the Contract Bond must inform the Owner **in writing** that it approves of such assignment being made.

In the event that the Contractor shall undertake to assign all or any part of any monies due or to become due under the Contract, the instrument of assignment shall contain a provision substantially to the effect that it is agreed that the right of the assignee in and to any of such monies shall be subject to the prior liens of all persons for services rendered or materials supplied for the performance of all Work embraced by the Contract.

3.9. Schedule:

Before Work is commenced under this contract, the Contractor shall submit to the Purchasing & Contracting Administrator a schedule of his operations, showing the order in which, and the approximate time at which he plans to begin the various sections, locations, or phases of his operations. This schedule is requested in order that operations of other contractors may be coordinated with the Work under this Contract, and in cases where the Work will interfere with the use of public streets, the routing of traffic may be properly planned. The Contractor shall cooperate with the City in developing a schedule that will best serve the interest of all parties affected. The schedule shall become an integral and binding part of this contract.

a) Work Hours: Working hours will be dawn to dusk, Monday through Saturday. No work shall be conducted on Sunday.

3.10. Shop Drawings:

a) In the type of Work for which detail drawings are necessary, the Contractor shall submit, **to the City's Project Manager, for approval by the appropriate parties,** copies of all shop drawings and schedules required for all portions of the Work, and no Work shall be fabricated by the Contractor, save at his own risk, until such approval has been given. Copies of these drawings and schedules shall be furnished in such number as the Purchasing & Contracting Administrator may direct.

b) The Contractor shall submit all drawings and schedules sufficiently in advance of construction requirements to allow ample time for proper review; and no claim by the Contractor

for delays, arising from his failure in this respect, shall be allowed unless the City substantially impacts the review process. Should this occur, a contract time adjustment will be considered.

c) All shop drawings submitted must bear proper approval by the Contractor as evidence that the drawings have been checked by the Contractor. Any drawings submitted without a stamp of approval shall not be considered and will be returned to the Contractor for re-submission. If the shop drawings show variations from the requirements of the Contract Documents because of standard shop practice or other reason, the Contractor shall make specific mention of such variation in his letter of transmittal in order that, if acceptable, suitable action may be taken for proper adjustment; otherwise, the Contractor shall not be relieved of the responsibility for executing the Work in accordance with the Contract Documents even though such shop drawings have been approved.

d) Where a shop drawing as submitted by the Contractor indicates a departure from the Contract which the City's Project Manager deems to be a minor adjustment in the interest of the Owner and which does not involve a change in the Contract price or extension of time, shall be referred to the Purchasing & Contracting Administrator prior to approval by the Project Manager.

e) Approval by the City's Project Manager of shop drawings will be general and shall not relieve the Contractor from the responsibility for adherence to all Contract terms, nor shall it relieve him of the responsibility for any error, which may exist.

3.11. Material and Workmanship:

Unless otherwise specified, all materials and equipment incorporated in the Work under the Contract shall be new. All Workmanship shall be first class and by persons qualified in the respective trades necessary to properly complete the contract.

3.12. Inspection and Testing of Materials:

Contractor is responsible for all the testing required on this project. The Contractor shall also be responsible for any rework or corrections to the work, and/or removal and replacement of the work as a result of failed tests as well as any additional testing.

The Purchasing & Contracting Administrator or the Project Manager may require any or all materials to be subjected to test by means of samples or other manner, at specific production points or after delivery. The City reserves the right to require additional testing to confirm quality and compliance with specifications. If the City requires testing by a third party, the Contractor shall afford such facilities as the Project Manager may require for collecting and forwarding samples. The Contractor shall provide the City satisfactory evidence such as manufacturer or supplier certificates, which will be subject to verification by the City, for the materials and finished articles furnished by the Contractor.

3.13. Engineer's Stamp:

As necessary, the Contractor will be responsible for the securing of all engineering stamps for any shop drawing(s) submitted for approval.

SECTION 4

SITE REQUIREMENT

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SECTION	4.1	Sanitary Provisions
	4.2	Water and Electric Meters
	4.3	Storage of Materials
	4.4	Salvage of Materials and Equipment

4.1. Sanitary Provisions:

The Contractor shall provide and maintain at his own expense, in a sanitary condition, such accommodations for the use of his employees as are necessary to comply with the requirements and regulation of the governing body, State Board of Health, local codes, or of the regulatory agency having jurisdiction at the particular location. He shall permit no public nuisance. The Contractor shall furnish at his cost an adequate supply of drinking water for his employees.

4.2. Water and Electric Meters:

The Contractor shall pay for all water and electricity used during the construction and testing of Work, and shall make all necessary arrangements for meters to measure the quantities used. All water required shall be purchased from the City's Water Resources division at the prevailing rates.

4.3. Storage of Materials:

Materials and equipment designed for permanent installation in the Work shall be carefully and properly stored and secured by the Contractor on the agreed-to site when delivered to ensure protection against deterioration of any type, theft or pilfering. These materials shall be so placed as to cause a minimum of inconvenience to other contractors on the Work and to the public. The stored items shall be arranged to facilitate inspections and any deterioration shall be grounds for rejection. If material stored on the job and paid for under the terms of the Contract is damaged or stolen before its incorporation in the Work, the amount paid the Contractor for the damaged or stolen material shall be deducted from the next estimate. Lawns, grass plots, or other private property shall not be used for storage purposes without written permission of the Owner. Documents allowing such storage shall be forwarded to the Purchasing & Contracting Administrator for his approval. The Contractor shall assure that stored materials do not have a deleterious effect on protected vegetation.

4.4. Salvage of Materials and Equipment:

Any materials, equipment, and machinery, considered by the Purchasing & Contracting Administrator to have a salvageable value, and that was a part of the structure, site, or right-of-way, prior to commencement of Work under this Contract, shall remain the property of the City. The Contractor shall remove such items and suitably store at the site, such that no damage, theft, or disposal of the items be conveyed without the expressed written permission of the Purchasing & Contracting Administrator subject to final disposition by the City. The Purchasing & Contracting Administrator shall provide the Contractor with a list of salvageable materials and equipment at the outset of the project and any modifications thereto shall be made in writing. The Purchasing & Contracting Administrator shall set forth in said letter the specific time for which the Contractor is responsible for the salvageable materials, equipment, etc.

SECTION 5

INSURANCE, PATENTS, PERMITS & TAXES

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SECTION	5.1	Insurance
	5.2	Patents
	5.3	Legal Restrictions, Licenses & Permits
	5.4	Federal Excise Tax
	5.5	Savings Due to Excise Tax Exemptions

5.1. Insurance:

A. The Contractor shall not commence Work under this Contract until he has obtained and provided insurance of the character specified below and in such amounts that will provide adequate protection to the Owner and the Contractor against all liabilities, damages, and accidents. The insurance obtained by the Contractor is subject to the approval of the Owner. The Contractor shall not allow any Subcontractor to commence Work on his subcontract until all insurance required of the subcontractor has been so obtained, provided, and approved. Neither the approval of the Owner nor a failure to disapprove insurance furnished by the Contractor or subcontractor shall release the Contractor or Subcontractor of full responsibility for liability, damages, and accidents as set forth herein. Attention is hereby directed to the provisions of Division 1, General Conditions, subsection 9.4.

B. The Contractor and each subcontractor shall maintain such required insurance during the life of this contract, and no modification or change of insurance coverage and provision shall be made without thirty (30) days written advance notice to the Purchasing & Contracting Administrator.

1) Worker's Compensation Insurance: The Contractor shall procure and maintain during the life of this contract Workers' Compensation Insurance for all his employees employed at the site of the project in accordance with all statutory requirements and, in case any Work is subcontracted, the Contractor shall require the Subcontractor to similarly provide Workers' Compensation Insurance for all of the latter's employees, unless such employees are covered by the protection afforded by the Contractor. In case any class of employees engaged in hazardous Work under contract at the site of the project are not protected under the Workers' statute, the Contractor shall provide and cause each Subcontractor to provide adequate Insurance for the protection of his employees not otherwise protected.

2) Contractor's Comprehensive Public Liability & Property Damage Insurance: the Contractor shall procure and maintain during the life of this contract such Contractor's Comprehensive Liability and Property Damage Insurance that shall protect him and any Subcontractor performing Work covered by this contract from claim for damage for personal injury, including accidental death, as well as from claims for property damages which may arise from operations under this contract, whether such operations be by himself or *by* any other Subcontractor or by anyone directly or indirectly employed by either of them. The amounts of such insurance shall be as follows:

a) Contractor's Comprehensive Public Liability in an amount not less than $1,000,000 for injuries, including wrongful death, to any one person in any one accident, and for more than one person in any one accident, in an amount not less than $1,000,0000.

b) Contractor's Comprehensive Property Damage Insurance in any one accident in an amount not less than $ 500,000. This insurance shall be extended to cover damage to underground wire, pipes, ducts, conduits, etc.

3) Contingent Liability: The Contractor shall furnish evidence to the Owner in the form of an insurance policy naming the Owner as the certificate holder that he has provided Protective Public Liability and Property Damage Insurance in the amounts above specified for himself and any subcontractors.

4) The Contractor shall acquire and maintain during the life of this Contract such Automobile Public Liability and Property Damage Insurance as shall protect him and any Subcontractor performing Work covered by this Contract, from claims for damage for personal injury, including accidental death, as well as from claims for property damage, which may arise from operations under this Contract, whether such operations be by himself or by any Subcontractor or by anyone directly or indirectly employed by either of them, and the amounts of such insurance shall be as follows:

a) Automobile Public Liability Insurance in an amount not less than $1,000,0000for injuries, including wrongful death to any one person in any one accident, and for more than one person in any one accident, in an amount of not less than $1,000,0000.

b) Automobile Property Damage Insurance in any one accident in an amount not less than $100,000.

5) In types or classes of Work which include, all or in part, building or structures which may be subject to damage by fire, wind, or vandalism, the Contractor shall take out and maintain during the life of this contract what is commonly known as "Builders Risk Insurance" covering fire, wind, extended coverage, and vandalism, in an amount equal to one hundred percent (100%) of the contract price pertaining to such building(s) or structure(s).

6) Proof of Coverage of Insurance: The Contractor shall furnish the Owner with satisfactory proof of coverage (e.g., Certificate of Insurance) of the insurance required naming the City as additionally ensured thereon, but the failure to provide adequate insurance shall not relieve the Contractor's responsibility to protect the Owner wholly from all such claims and damages.

5.2. Patents:

It is mutually understood and agreed that without exception, Contract prices are to include all royalties and costs arising from patents, trademarks, and copyrights in any way involved in the Work. It is the intent that whenever the Contractor is required or desires to use any design, device, material, or process covered by letters, patent, or copyright, the right for such use shall be provided for by suitable legal agreements with the Patentee or Owner and a copy of this agreement shall be filed with the Purchasing & Contracting Administrator. However, whether or not such an agreement is made or filed as noted, the Contractor and the Surety in all cases shall indemnify and save harmless the City from any and all claims for infringement by reason of the use of any such patented design, device, material or process, to be performed under the Contract, and shall indemnify the City from any costs, expenses, and damages which it may be obliged to pay, by reason of such infringement, at any time during the prosecution or after the completion of the Work.

5.3. Legal Restrictions, Licenses and Permits:

The Contractor is assumed to be familiar with all Federal, State, County, City and other laws, codes, ordinances, and regulations which in any manner affect those engaged or employed in the Work or equipment used in or upon the site, or in any way affect the conduct of the Work. No pleas of misunderstanding or ignorance on the part of the Contractor will in any way serve to modify the provisions of the Contract. The Contractor, at all times, shall observe and comply with all Federal, State, County, City, and other laws, codes, ordinances, and regulations in any manner affecting the conduct of the Work. The Contractor and his Surety shall indemnify and save harmless the Owner, and all its officers, agents, and servants against any claim or liability arising from or based on the violation of such law, ordinance, regulation, order or decree, whether by himself or his employees.

The Contractor shall procure all permits and licenses, pay all charges and fees, and give all notices necessary and incidental to the due and lawful prosecution of the Work.

5.4. Federal Excise Tax:

The forms needed for applying for exemption certificates for materials and equipment, normally subject to the Federal Excise Tax, may be obtained from the appropriate Federal agency (IRS). The contractor is solely responsible for obtaining the desired exemption certificate from the Federal government.

5.5. Savings Due to Excise Tax Exemptions:

The savings anticipated by the bidder due to exemption from Excise taxes shall be reflected in the bid price

SECTION 6

CONTROL OF WORK

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SECTION

6.1 Authority of the Project Manager
6.2 Inspectors
6.3 Inspection
6.4 Construction Stakes
6.5 Plans & Specifications
6.6 Cooperation of the Contractor Required
6.7 Removal of Defective/Unauthorized Work
6.8 Substantial Completion
6.9 Final Inspection
6.10 Certificate of Final Completion
6.11 As-Built Plans

6.1. Authority of the City's Project Manager:

The Project Manager (PM) is the employee of the City of Titusville responsible for the overall coordination, oversight and management of the Work. Instructions of the PM are to be strictly and promptly followed. The Contractor shall designate a complementary representative to receive such instructions in his absence, and failing to do so, will be held responsible for the execution of any instructions that may be necessary to be given in his absence.

The PM is to have free access to the site materials and the Work at all time for laying out, measuring, inspecting, or directing the same; and the Contractor is to afford him all necessary facilities and assistance for doing so.

All Work conducted or materials furnished are to be subject to the acceptance or the rejection of the PM, who shall determine the amount, quality, fitness, and the acceptability of the Work and the materials to be paid for and shall decide all questions or differences of opinion that may arise with the Contractor as to the interpretation of the plans and specifications. In the event of such questions or difference of opinion, the decision of the PM is to be a condition precedent to the Contractor's right to receive any money for the Work or materials to which the questions or difference of opinion relates. Any changes to the scope of work or any deviations from the contract documents must be approved in writing through the Purchasing & Contracting Administrator in accordance with Section 4, paragraph 4.2 Changes in Work.

The PM in conjunction with the Purchasing & Contracting Administrator shall have the authority to suspend the Work wholly or in part for such period(s) as may be deemed necessary, due to the unsuitable execution of the Work, or for such time as is necessary due to failure on the part of the Contractor to carry out orders given or perform any or all provisions of the Work. The Contractor shall not suspend the Work and shall not remove any equipment, tools, lumber, or other materials without the written permission of the Purchasing and Contracting Administrator.

6.2. Inspectors:

Inspectors employed by the City shall be authorized to inspect all Work done and material furnished. Such inspections may extend to all or any part of the Work and to the preparation or manufacture of material to be used. Inspectors shall be stationed on the Work to report to the PM as to the progress of the Work and manner in which it is being performed and to report whenever it appears that materials furnished, and Work performed by the Contractor fail to fulfill requirements of the specifications and contract. Inspectors shall call to the attention of the Contractor any such failures or default, but no inspection nor any failure to inspect at any time or place shall relieve the Contractor from any obligation to perform all of the Work strictly in accordance with the requirements of the drawings and specifications. In case of any dispute arising between the Contractor and the Inspector as to the materials furnished or manner of performing Work, the Inspector shall have the authority to reject materials or temporarily suspend the Work until the issue can be decided on by the PM in conjunction with the Purchasing & Contracting Administrator.

If the Contractor refuses to suspend operation on verbal order, the Inspector shall issue a written order giving the reason for shutting down the Work. After placing the order in the hands of the person in charge, the Inspector shall immediately leave the Work site. Work completed during the absence of the Inspector, after such notice, will not be accepted or compensable.

Inspectors shall not be authorized to revoke, alter, enlarge, relax, or release any requirements of the plans and specifications. Inspectors shall in no case act as foremen or perform other duties for the Contractor, nor interfere with management of the Work by the latter. Any instructions, which Inspectors may give the Contractor, shall in no way be construed as releasing the Contractor from fulfillment of the terms of the Contract Documents.

The payment of any compensation, whatever may be its character or form, or the giving of any gratuity, or the granting of any valuable favor, by the Contractor to any Inspector, directly or indirectly, is strictly prohibited and any such act on the part of the Contractor will constitute a violation of this Contract.

6.3. Inspection:

The Contractor shall furnish the PM with every reasonable facility for ascertaining whether or not the Work as performed is in accordance with the requirements and intent of the plans, specifications, and contract. If the PM requests it, the Contractor shall at any time before final acceptance of the Work, remove or uncover such portions of the finished Work as may be directed.

After examinations, the Contractor shall restore said portions of the Work to the standard requirements of and by these specifications. Should the Work thus exposed or examined prove acceptable, the uncovering or removing and the replacing of the covering or making good of the parts removed shall be paid for as "extra Work"; but should the Work so exposed or examined prove unacceptable, the uncovering or removing should be paid at the Contractor's expense.

6.4. Construction Stakes:

The City will furnish basic control survey markers and benchmarks prior to start of construction and it shall be the responsibility of the Contractor to furnish and install all necessary construction stakes to establish lines and grades for the proper execution of the Work as shown on the plans or as specified.

6.5. Plans & Specifications:

The plans, specifications, special provisions, and any Addenda describe the Work and all materials and Workmanship. All dimensions must be in strict accordance with the plans, specifications, special provisions, and any addenda. Only the Purchasing & Contracting Administrator may, in writing, authorize exceptions. When a conflict arises, the standard specifications take precedence over the plans and the special provisions shall take precedence over the standard specifications. On all plans, the figured dimensions shall govern in case of discrepancy between the scaled dimensions and figures.

In the event the Contractor discovers any apparent error or discrepancy between the plans, specifications, or special provisions, he shall immediately call upon the Purchasing & Contracting Administrator for an interpretation and decision, and such decision shall be final. The Contractor shall take no advantage of any apparent error or omissions in the plans or specifications.

6.6. Cooperation of the Contractor Required:

The Contractor shall give the Work the constant attention necessary to facilitate the progress thereof and he shall cooperate with the PM and with other contractors in every way possible. The Contractor shall have a competent superintendent on the Work at all times who is fully authorized as his agent on the Work. Such superintendent shall be capable of reading and thoroughly understanding the plans and contract documents, and shall receive and fulfill instructions from the PM, or the authorized representative. The Contractor and his superintendent shall provide all reasonable facilities to enable the PM and Inspector to inspect the Workmanship and materials entering in the Work.

6.7. Removal of Defective/Unauthorized Work:

All Work that has been rejected and/or condemned shall be remedied, or if necessary, removed and replaced in an acceptable manner by the Contractor at his own expense. Work done beyond the lines and grades shown on the plans -- except as herein provided -- or any Work done without authority will be considered as unauthorized and will not be measured or paid for by the

City. If so ordered by the Owner, such unauthorized Work shall be removed, by the Contractor at his own expense.

6.8. Substantial Completion:

When the Work has progressed to a point whereby all contract line items are essentially complete and the Owner can take beneficial occupancy of the Work such that use can be made of the product, the Owner will schedule an inspection of the Work with the Contractor and representatives of any permitting agency that has jurisdiction over the Work and develop a list showing any outstanding items to be completed (i.e., punch-list) required to render complete, satisfactory and acceptable all the Work required under the contract. The Purchasing & Contracting Administrator shall issue a "Certificate of Substantial Completion" containing the punch-list, an anticipated date of final completion, and any other required closing documents or items. The Certificate of Substantial Completion will therefore establish the date when no further liquidated damages will be assessed, the tentative completion date, the punch-list, and any other conditions necessary to satisfactorily complete the project.

6.9. Final Inspection:

When the Contractor has fully completed all Work provided for under this Contract and the punch-list as provided for in the Certificate of Substantial Completion, and so notified the Project Manager in writing, the PCAR will make a final inspection of the completed Work. If all Work is completed satisfactorily in accordance with all terms, provisions, and stipulations of drawing, specifications, and contract, the Purchasing & Contracting Administrator will issue a Certificate of Completion showing the entire amount of Work performed and compensation earned by the Contractor, including approved extra Work and compensation, therefore.

6.10. Certificate of Final Completion

Upon satisfaction of all the requirements of the Construction Contract, the City and Contractor will execute a *Certificate of Final Completion* in form found in these documents. The issuance of final payment for the Work shall be contingent on the execution of said certificate by the following individuals: Contractor; Engineer; Project Manager; City Engineer; Building Department Official; Project's Department Head; Purchasing & Contracting Administrator; and City Manager.

6.11. As-Built Plans:

The Contractor shall keep an accurate record of the changes, nature, location, and dimensions of all Work, especially such Work as may subsequently become concealed or inaccessible, and transmit this information, properly marked on a set of the contract plans, to the Purchasing & Contracting Administrator when the Work is complete. The City may opt to request these as-built plans in any medium it finds most suitable.

SECTION 7

CONTRACTOR'S ORGANIZATION

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SECTION	7.1	Character of Workmen and Equipment
	7.2	Qualifications for Employment
	7.3	Labor Regulations
	7.4	Safety Considerations
	7.5	Review of Records

7.1 Character of Workmen and Equipment:

A. The Contractor shall employ such superintendents, foremen, and workmen which are competent, and the Purchasing & Contracting Administrator may demand the dismissal of any person(s) employed by the Contractor, in, about, or upon the Work site who shall exhibit misconduct or be incompetent or negligent in the proper performance of their duties, or neglects or refuses to comply with the directions given by the Owner or his representatives. Such person(s) shall not be employed again without the written consent of the Project Manager or the Purchasing & Contracting Administrator. Should the Contractor continue to employ or again employ such a person(s), the Purchasing & Contracting Administrator may suspend the Work until such orders are complied with totally. All workers must have sufficient skill and experience to properly perform the Work assigned them.

B. The Contractor shall furnish such equipment as is considered necessary for the execution of the Work in an acceptable manner and at a satisfactory rate of progress. All equipment, tools, and machinery used for handling materials and executing any part of the Work shall be subject to the approval of the Project Manager and shall be maintained in a satisfactory Working condition. Equipment used on any portion of the Work shall be such that no injury to the Work, adjacent property, or personnel will result from its use. The Contract may be annulled if the Contractor fails to provide adequate and/or safe equipment for the project.

7.2 Qualifications for Employment:

With respect to all skilled, semi-skilled, and/or unskilled workers employed on the project under this Contract, preference in employment shall be given to perform the Work to local individuals and labor organizations capable of performing the necessary Work. No person shall be employed in violation of the State or Federal labor laws; no person under the age of 16 years shall be employed on the project under this Contract; the contractor shall provide that he shall not operate against the employment of physically handicapped persons, otherwise employable where such persons may be safely assigned to Work which they can ably perform. No person currently serving sentences in a penal or correctional institution and no inmate of an institution for the mentally defective shall be employed on a project under this Contract.

7.3 Labor Regulations:

The Contractor shall fully comply with all applicable Federal and State laws and regulations concerning labor, Work hours, labor conditions, and wage rates. Specific requirements of this Contract will be expressed and mutually agreed to in a separate section of these documents.

7.4 Safety Considerations:

Precaution shall be exercised at all times in the protection of all persons (including employees) and property. The safety provisions of applicable laws, shall be strictly followed. As required, the Contractor shall comply with all applicable local, State and Federal rules and regulations pertaining to the health and welfare of its employees and the contracted Work.

Failure to maintain safety standards in the Work pursuant to all applicable rules and regulations may be grounds for suspension of the Work.

7.5 Review of Records:

The Contractor shall allow and permit the Project Manager or his duly authorized representative to inspect and review all payrolls, records of personnel, conditions of employment, invoice of materials, books of accounts and any other relevant data and records pertinent to the Contract and any subcontracts.

SECTION 8

CONTRACT EXECUTION AND PROGRESS

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8.1. Execution of Contract:

A) The Contractor shall begin Work promptly within the time specified in the approved schedule and time bid and shall so execute the Work such that progress will be made approximately proportional to time elapsed after the Notice to Proceed. The Contractor shall provide an adequate force of labor and equipment to execute the Work at as many different points as may be deemed necessary to ensure the completion of the Work within the time limit for completion, and as set forth in the proposal. (The contractor shall notify the Purchasing & Contracting Administrator at least 48 hours before beginning work, and shall start the Work at the approved location.)

B) Schedules - Immediately after execution and delivery of the Contract, the Contractor shall deliver to the Purchasing & Contracting Administrator a construction progress schedule in form satisfactory to the PCA showing the proposed dates of commencement and completion of each of the various phases of the required work.

8.2. Nights, Sunday or Holiday Work:

Except upon specific written permission from the Purchasing & Contracting Administrator, the Contractor shall not perform any Work on Sundays or on legal state, federal or municipal holidays. No night Work will be permitted except in case of emergency or as authorized by the Purchasing & Contracting Administrator.

8.3. Contractor Operations:

A) The Contractor shall at all times conduct the Work in such a manner and in such sequence as will ensure the least amount of local interference. He shall not open up or begin Work to the prejudice of Work already started.

B) The contractor shall arrange his Work and dispose of his materials so as not to interfere with the operations of other contractors engaged in adjacent Work and to join his Work to that of others in a proper manner and in accordance with the intent of the Plans and Specifications, and to perform his Work in the proper sequence in relation to that of other contractors.

C) The Contractor shall be held responsible for any damage done by him or his agents to the Work performed by another contractor.

D) The Contractor shall conduct his operations and maintain the Work in such condition that adequate drainage shall be in effect at all times.

E) Control of erosion, sedimentation, water pollution and flooding shall be mandatory, in accordance with all applicable Federal, State and local laws and regulations and the cost for doing such Work shall be included in the Contractor's Bid Price.

8.4. Traffic Control:

On the type or class of projects involving construction Work or on public thoroughfares, the following provisions shall apply.

A) The Contractor at all times shall conduct the Work in such a manner as to ensure the least obstruction to traffic as practical. Convenience of the general public and of the residents and businesses along and adjacent to the Work shall be provided for in a manner satisfactory to the Owner.

B) Sidewalks, gutters, drains, fire hydrants, and private drives shall, insofar as practical, be kept in condition for their intended uses. While the Work is going on at the location, as much as half the street width at such location may be barricaded to exclude traffic entirely, but street traffic shall not be obstructed without providing alternate access. Fire hydrants on or adjacent to the Work shall be kept accessible to fire apparatus at all times and no material or obstructions shall be placed within ten (10) feet of any such hydrant.

C) Construction materials stored upon a public street right-of-way shall be placed so as to cause as little obstruction to the general public as is reasonably possible. All material excavated from any Work under the Contract in excess of that required for the necessary construction of such Work shall be hauled away and disposed of as directed by the PM.

D) Streets and/or rights-of-way shall not be closed, except when and where directed by the Project Manager or as properly permitted by the agency holding jurisdiction. Whenever the street is not closed, the Work must be conducted with the provision for a safe passageway(s) for pedestrian and vehicular traffic at all times. The Contractor shall make all necessary arrangements with the proper City officials concerning maintenance of traffic and selection of detours required.

8.5. Barricades, Warning Lights and Other Protective Devices:

When permission has been granted to close an existing roadway or right-of-way, the Contractor shall furnish and erect signs, barricades, lights, flags, and other protective devices, which shall conform to the requirements, and be subject to the approval of the Project Manager. From sunset to sunrise, the Contractor shall furnish and maintain red lights at such locations as the PM may direct, across and/or along the roadways being closed to traffic.

The Contractor shall furnish watchmen in sufficient numbers to protect and divert the vehicular and pedestrian traffic from working areas closed to traffic, or to protect any new work. Failure to comply with this requirement will result in the City stopping the Work until the Contractor provides the necessary protection.

No separate payment will be made for such signs, barricades, lights, flags, watchmen and other protective devices as required. All costs are to be included in the prices bid for the various items scheduled in the proposal pages.

8.6. Use of Explosives:

When the use of explosives is necessary for the execution of the Work the Contractor shall observe the utmost care in its use so as not to endanger life or property; and whenever directed,

the number and size of charges shall be limited. All explosives shall be stored in a secure manner and all such storage places shall be marked clearly "DANGEROUS EXPLOSIVES" and shall be in the care of a competent watchman at all times. The Contractor must familiarize himself with all laws and ordinances pertaining thereto and govern himself and his employees accordingly.

8.7. Temporary Suspension of Work:

The Owner shall have the authority to suspend the Work wholly, or in part, for such period(s) as he may deem necessary, due to unsuitable weather or such other conditions as are considered unfavorable for the satisfactory execution of the work, or such time as is necessary, due to the failure on the part of the Contractor to carry out orders given or perform any or all provisions of the Contract.

If it should become necessary to stop Work for an indefinite period, the Contractor shall store all materials in such a manner that they will not become an obstruction nor become damaged in any way. He shall take every precaution to prevent damage or deterioration of the Work performed; provide suitable drainage by opening ditches, shoulder drains, etc.; and erect temporary structures where necessary.

The Contractor shall not suspend the Work without written authority from the Owner and shall proceed with the Work promptly when he has received written notice from the Owner to resume operations.

No allowance of any kind will be made for such suspension of Work -except in equivalent extension of time for completion of the Contract.

8.8. Computation of Contract Time for the Completion of Work:

The Contractor shall perform fully, entirely, and in accordance with these Specifications, the Work contracted for within the specified time stated in the Proposal.

In adjusting the Contract Time for the completion of the work, the length of time expressed in calendar days during which the execution of Work has been delayed due to any suspension of Work ordered by the Purchasing & Contracting Administrator or his representative, or omission of the Owner and not by any fault of the Contractor, shall be added to the Contract time as set forth in the Proposal -- all of which shall be binding and conclusive upon both parties to the Contract.

No allowances shall be made for delay or suspension of the Work due to the fault or negligence of the Contractor. If the satisfactory execution and completion of the Contract shall require Work or material in greater value than set forth in the Contract, then the Contract time shall be increased in the same ratio as the additional value bears to the original value contracted for (see Section 4.2, Changes in Work).

8.9. Failure to Complete the Work on Time (Liquidated Damages Calculation):

The City and Contractor recognize that time is of the essence in this Contract, and as delay in prosecution of the Work may result in public inconvenience, traffic obstruction, or business interference, it is understood that the Contractor must vigorously press towards completion of the

Work within the time frame established by this Contract. Moreover, the cost to the City for the administration, engineering, inspection, and supervision will be increased as the construction period is lengthened.

Should the Contractor or, in case of default, the surety, fail to complete the Work within the contractually stipulated time, or within such extra time as may be allowed as herein above provided, it is agreed that for each calendar day that any portion of the Work shall remain incomplete, after the time specified in the Contract, with any extension of time which may be allowed by the City for the completion of the Work provided for in the Contract Documents, the sum per day to be deducted from monies due the Contractor, not as a penalty, but as liquidated damages for added expense, shall be calculated by one of the following methods:

A) The daily liquidated damages for public projects that will not produce direct revenue shall be calculated by multiplying one mill (.001) times the total cost of the contract. The resulting amount shall be rounded off to the nearest dollar and this amount will be deducted daily from the amount due the Contractor.

Example: Contract Amount x 1 Mill = Daily Liquidated Damages

$2,000,000.00 x .001 = $2,000.00 per day

The Contractor shall take into account all contingent Work which has to be done by other parties, arising from any cause whatsoever, and shall not plead his want of knowledge of said contingent Work as an excuse for delay in his work, or for the non-performance.

Permitting the Contractor to continue and finish the Work or any part of it after the expiration of the number of calendar days allowed for completion or after any extension of time, shall in no way operate as a waiver on the part of the Owner of its rights under this Contract. In case of default of the Contract and the completion of the Work by the Owner as hereinafter provided, the Contractor and his Surety shall be liable for the liquidated damages under the Contract; but no liquidated damages shall be assessed for any delay in the final completion of the Work by the Owner due to any unreasonable action, negligence, omission, or delay of the Owner.

If any suit for the collection of, or involving the assessment of liquidated damages, the reasonableness of the amounts stipulated in the foregoing calculations shall be presumed. The liquidated damages referred to herein are intended to be and are accumulative and shall be in addition to every other remedy now or hereafter enforceable by law, in equity, by statute, or under the Contract.

8.10. Delays/Damages and Additional Time

If the Contractor refuses or fails to proceed with the work, or any part thereof, with such diligence as will ensure its completion within the time specified in the Contract, or any extension thereof, or fails to complete the Work within said time, the Owner may -- by written notice to the Contractor -- terminate his right to proceed with the Work or such part of the Work to which there has been a delay. In such event, the Owner may take over the Work and proceed with same to completion; the Contractor and his Surety shall be liable to the Owner for any excess cost occasioned to the Owner. If the Contractor's right to proceed is so terminated, the Owner may take

possession of and utilize such materials, appliances, and plants on site necessary to complete the work.

If the Owner does not terminate the right of the Contractor to proceed and a delay is encountered, although the Contractor continues the work, liquidated damages shall be paid to the Owner when the actual damage for the delay cannot be determined. These liquidated damages are fixed and agreed damages paid by the Contractor to the Owner for each calendar day of delay until the Work is completed or accepted. The specific amounts for the liquidated damages will be calculated as set forth in Section 8.9 of these specifications and the Contractor and his sureties shall be liable for the amount indicated. However, the right of the Contractor to proceed shall not be terminated nor the Contractor charged with liquidated damages because of any unforeseeable delays in the completion of the Work beyond the control and without the fault of the Contractor -- including, but not restricted to, act(s) of God, fires, floods, epidemics, quarantine restrictions, strikes ' freight embargoes, unusually severe weather, or delays of a subcontractor hired by the City and subject to such causes, if the contractor shall within ten (10) days from the beginning of any such delay notify the Purchasing & Contracting Administrator in **writing** of the cause and reason for the delay. The Owner shall have the right to grant an extension of the above time requirement prior to the date of final settlement. The Purchasing & Contracting Administrator shall ascertain the facts and the extent of the delay; if it appears to the Purchasing & Contracting Administrator that the Contractor is delayed by conditions beyond his control, additional time for completion of the contract will be allowed on the recommendation of the Purchasing & Contracting Administrator, but no payment will be made because of said delays unless warranted by City actions.

8.11. Final Cleanup:

The Contractor shall at all times keep the premises free from accumulation of waste materials or rubbish caused by his employees or the Work.

Upon final completion of the Work and before acceptance and final payment shall be made, the Contractor shall clean and remove from the site, the right-of-way, and adjacent property, all surplus and discarded materials, rubbish, and temporary structures. The Contractor shall restore in an acceptable manner all property -- both public and private – which, has been damaged during the execution of the work. The Contractor shall leave the site and vicinity unobstructed in a neat and presentable condition throughout the entire area. The placing of materials of every character, rubbish, or equipment on the abutting property -- with or without the consent of the property owner(s) -- shall not constitute satisfactory disposal. If the Work is of such a character as may be done by block or sections, the Contractor may be required to promptly remove and dispose of accumulated rubbish, debris, or surplus materials from blocks or sections as completed or partially completed.

No separate payment will be made for final cleaning up and restoration of property, but all costs thereof shall be included in the prices bid for the various scheduled items of work.

8.12. Guarantee:

Neither the final certificate of payment nor any provision in the Contract Documents nor partial or entire use of the occupancy of the premises by the Owner shall constitute an acceptance

of the Work not done in accordance with the Contract documents or relieve the Contractor of the liability in respect to an expressed warrantee or responsibility for faulty materials or workmanship. The Contractor shall remedy any defects in the Work and pay for any damage to other Work resulting therefrom which shall appear within a period of one (1) year from the date of the final acceptance of the Work -- unless a longer period is specified or negotiated between the Owner and Contractor. The Owner will give notice of observed defects with reasonable promptness during said guarantee period. The City reserves the right to require additional bond or bond guarantees to assure the proper protection of the work. Extended guarantees or bonding shall be negotiated amongst the parties hereto in response to extraordinary circumstances. Final payment will not be made until the Work has been accepted by a representative of the City.

8.13. Maintenance Bond

The Contractor shall post with the City a one-year maintenance bond in form satisfactory to the Purchasing & Contracting Administrator in an amount not-to-exceed 15% of the total project cost.

8.14. Termination of Contractor's Responsibility:

This Contract will be considered complete when all Work has been completed and a final inspection is made, the Work accepted by the Owner, and the final estimate paid. The Contractor will then be released from further obligations, except as set forth in these General Conditions and as provided by law.

SECTION 9

LEGAL RELATIONS AND RESPONSIBILITY

INDEX

SECTION	9.1	No Waiver of Legal Rights
	9.2	Furnishing Right-of-Way
	9.3	Laws to be Observed
	9.4	Contractor's Responsibility for Work
	9.5	Protection and Restoration of Property

9.1. No Waiver of Legal Rights:

After final payment has been made, the Owner reserves the right to claim and recover from the Contractor, his Surety, or both, by process of law, such sums that may be sufficient to correct any error or make good any defects in the Work and materials -- should an error be discovered in any partial or final estimates, or should proof be discovered of defective Work or materials used by or on the part of the Contractor.

9.2. Furnishing Right-of-Way:

Where the Work called for extends upon or through private property, the Owner will procure all the necessary rights and deeds for access to the property. The Contractor shall not proceed with this part of the Work until the Owner has completed his negotiations with the property holders or has
acquired all said necessary rights by eminent domain or otherwise.

9.3. Laws to be Observed:

The Contractor shall familiarize itself with, comply with, and govern itself in accordance with all Federal, State, County, and City laws, by-laws, ordinances, or regulations controlling the action or operation of those engaged or employed in the Work or affecting materials used. The Contractor shall indemnify and save harmless the Owner and all of its officers, agents, and employees against any claims or liability arising from or based on the violations of any such laws, by-laws, ordinances, regulations, orders, or decrees -- whether by himself or his employees.

9.4. Contractor's Responsibility for Work:

Until acceptance of the Work by the Owner, it shall be under the charge and in care of the Contractor and he shall take every necessary precaution against injury or damage to the Work by action of the elements or from the execution/non-execution of the work. The Contractor shall rebuild, restore, and make good -- at the Contractor's own expense -- all injuries or damages to any portion of the Work occasioned by any of the above causes before its completion and acceptance.

9.5. Protection and Restoration of Property:

Buildings, sidewalks, benches, shade trees, lawns, shrubbery, and all other improvements potentially obstructing the Work shall be duly protected by the Contractor. Property obstructions, such as sewers, drains, water or gas pipes, conduits, railroads, poles, and walls, posts, galleries, bridges, manholes, mailboxes, street monuments, etc., shall be carefully protected from damage and shall not be displaced if avoidable. The Contractor shall give due notice to any department or public service corporation controlling such things as manholes, mailboxes, meter boxes, street monuments, etc., prior to adjusting them to grade and shall be held strictly liable to the City if any such existing improvements or utilities are disturbed, damaged, or covered up during the cause of the work.

If it should become necessary to move any obstructions, the removal thereof shall be at the expense and risk of the Contractor, who is to obtain the consent of the Owner(s) or others in charge.

Before commencing, the Contractor shall confer with same as to the best manner of protecting the interest involved. The City may elect to retain ownership of any sewer pipe, brick, stone, or other valuable material(s) encountered and the Contractor, when so requested, shall carefully remove same and place in a convenient location for removal by the City.

The right is reserved by the City or the Owner(s) of the adjacent property to lay or to repair in the street -- under the direction of the Purchasing & Contracting Administrator's representative -- any drain, conduit, main or service pipe(s), or their accessories, at any time before the completion of the project. The Contractor shall exercise such supervision thereof as will protect him against defects in the finished work. Any delay as a result thereof shall be treated as delayed by action of the City any additional expense to the Contractor resulting therefrom shall be paid as provided herein under "Extra Work and Payment." In case of the Contractor's failure to restore any property damaged by his operations or to make good such damage or injury, the Purchasing & Contracting Administrator may -- upon forty-eight (48) hours written notice -- proceed to rebuild, repair, or otherwise restore such property as may be deemed necessary; the cost thereof will be deducted from any monies due, or which will become due the Contractor under this Contract.

The locations or grades of underground structures, utilities, foundations, etc., as shown on the plans, are taken from the best available records. The City shall not be held accountable for inaccuracies or omissions in the locations or grades of existing underground structures, utilities, foundations, etc. No claim is to be made by the Contractor for damages on account of the proximity to, leaking from, or delay caused by underground structures, utilities, foundations, etc.

If any underground structure, utility (public or private), foundation, etc., is found to interfere with the location of the proposed Work, either the position of the underground structure, utility, or foundation or that of the proposed Work, will be adjusted to provide the necessary clearance. Such necessary adjustment will be made either by the City or the utility involved. Interference shall mean that the underground structure, utility, foundation, etc., is found to be in the position as shown on the plans to be occupied by the proposed Work. If underground structures, utilities, foundations, etc., encountered during construction do not interfere with the planned position of the proposed Work, no change or adjustment will be made by the City; neither will the City require a utility to change the alignment or grade.

SECTION 10

MEASUREMENT AND PAYMENT

INDEX

SECTION	10.1	Scope of Payment
	10.2	Basis of Payment
	10.3	Measurements for Payment
	10.4	Extra Work and Payment
	10.5	Cancelled Items and Payment
	10.6	Partial and Final Payments

10.1. Scope of Payment:

The Contractor shall receive and accept the compensation as herein provided in full payment for furnishing all materials, labor, tools, equipment, and transportation, and for performing all Work required to complete the Work under the Contract; and also in full payment for all loss or damage arising from the nature of the Work, or from the action of the elements, or from any unforeseen difficulties which may be encountered during the execution of the Work until its final acceptance by the City.

For each of the items included and for which a unit price is stated in the Proposal, the aggregate amount to be paid by the City at such unit prices shall be the measured amount of such items incorporated by the Contractor in the completed Work and acceptable to the Project Manager and the Purchasing & Contracting Administrator.

The unit prices stated in the Proposal include all costs and expenses for materials, labor, tools, equipment, transportation, commissions, patent fees and royalties; removing crossings or other obstructions; protecting or maintaining pipes, drains, railroad tracks, buildings, bridges, or other structures furnishing temporary crossings or bridges; furnishing all supplemental construction stakes, batter boards, templates, common and ordinary labor for handling materials; and all costs or expenses for performing and completing the Work as specified.

It is mutually agreed that due to latent field conditions that cannot be foreseen at the time of advertising for bids, adjustments of the plans to such field conditions may be necessary during construction. Therefore, approved changes in the plans shall be recognized as constituting a normal and accepted margin of adjustment not unusual and not involving or permitting any change or modification of unit prices, in which case payment will be made for the revised quantities at the unit price bid in the Proposal.

10.2. Basis of Payment:

The basis of payment for an item at the unit price shown in the Proposal shall be in accordance with the description of that item given in the Proposal and Specifications pertaining to that item.

10.3. Measurements for Payment:

Measurements for payment for each item shown in the Proposal shall be in accordance with the description of that item given in the Proposal and Specifications pertaining to that item.

10.4. Extra Work and Payment:

The Contractor shall perform unforeseen Work, for which there is no price included in the proposal, whenever it is deemed necessary or desirable by the Purchasing & Contracting Administrator or his representative to satisfactorily complete the unforeseen Work. Such extra Work shall be performed promptly in accordance with the Specifications and as directed by the Purchasing & Contracting Administrator, **provided, however that before any extra Work is begun, a written order from the Purchasing & Contracting Administrator to do the Work**

shall be received by the Contractor. All extra Work ordered and performed in accordance with the foregoing will be paid for at the price (mutually agreed upon by the Contractor and the Purchasing & Contracting Administrator to be equitable compensation for the Work contemplated) stipulated in the Purchasing & Contracting Administrator's written order for such Work.

However, in the event the Contractor and the Purchasing & Contracting Administrator fail to agree upon an equitable price for any extra Work ordered, it shall be performed by using such tools, labor, equipment, and materials as may be specified by the Purchasing & Contracting Administrator and will be paid for in the following manner:

a) For all labor, including a foreman in direct charge of the specified operations, the Contractor shall receive a sum equal to the current local rate of wages for every hour that the laborer is actually engaged in such Work, to which shall be added an amount for overhead and profit of such sum and a total thereof shall be full compensation to the Contractor for general supervision and for furnishing and repairing small tools and ordinary equipment used in doing the extra Work. In addition, the Contractor shall be paid the actual cost of Social Security Taxes, Surety Bond, Unemployment Insurance, Workers Compensation Insurance, and Contractor's Public Liability and Property Insurance involved in such extra Work -- based on actual wages paid to such laborer.

b) For all materials used, the Contractor shall receive the actual cost of such materials -- including freight charges -- as shown by original receipted bills, to which cost shall be added an amount equal to ten percent.

c) When any special machinery or special equipment -- including fuel and lubricants -- are required for the economic performance of extra Work, the Contractor will receive compensation based on the Rental Blue Book (Rental Blue Book for Construction Equipment or Rental Blue Book for Older Construction Equipment, whichever is applicable) prevailing applicable rate (monthly or weekly or daily), plus the applicable operating rate for each hour that the equipment is in operation.

The compensation herein provided shall be received and accepted by the Contractor as payment in full for all extra Work done.

The Contractor's representative and the Project Manager shall compare records of extra Work done at the end of each day. Such records shall be made in duplicate upon a form provided for such purpose by the Purchasing & Contracting Administrator and shall be signed by both the Project Manager and the Contractor's representative; one copy will be submitted to the Purchasing & Contracting Administrator and the other shall be retained by the Contractor.

10.5. Cancelled Items and Payments:

The City shall have the right to cancel those portions of the Contract relating to the construction of any item provided therein for any reason. Such cancellation shall entitle the Contractor to payment in a fair and equitable manner covering all items of cost incurred by the Contractor prior to the date of cancellation or suspension of the Work by order of the Purchasing & Contracting Administrator. The Contractor shall be allowed a profit percentage on the materials used on construction Work actually performed at the same rates as provided for herein under "Extra

Work & Payment". No allowance will be made for anticipated profits on any part of the cancelled Work. Acceptable materials ordered by the Contractor or delivered to the Work site prior to the date of such cancellation or suspension shall be purchased from the Contractor by the City at actual cost and shall thereupon become the property of the City.

10.6. Partial and Final Payments:

a) Not later than twenty-five (25) days after receipt of the proper pay estimate, the Owner will make a partial payment to the Contractor on the basis of duly certified and approved estimates of the Work performed during the preceding calendar month under this Contract. To ensure the performance of this Contract, the Owner will retain ten percent (10%) of each estimate until final completion and acceptance of all Work covered by this Contract.

b) The Contractor shall submit to the Purchasing & Contracting Administrator his estimate of Work completed and invoice no later than 4:30 p.m. on the first Working Day of the month. Estimates and invoices submitted after this time will be delayed in processing.

c) In preparing estimates, the material delivered on the site and preparatory Work done shall be taken into consideration -- provided that such materials have been delivered and inspected and that payment therefore has been satisfactorily certified by the Contractor to the Purchasing & Contracting Administrator.

d) All material and Work covered by partial payments made shall thereupon become the sole property of the Owner, but this provision shall not be construed as relieving the Contractor from the sole responsibility for all materials and Work upon which payments have been made or the restoration of any damaged Work or as a waiver of the right of the Owner to require the fulfillment of all of the terms of the Contract.

e) As soon as the Purchasing & Contracting Administrator is notified of the completion of the Work and can assure himself by tests, inspection, or otherwise that all of the provisions of the Contract have been carried out satisfactorily, he/she will make a final estimate of the value of all Work done and will deduct therefrom all previous payments which have been made. All prior estimates and payments shall be subject to correction in the final estimate and payment. Within sixty (60) calendar days after the approval of such final estimate by the Purchasing & Contracting Administrator, the amount of the final estimate -- less any charges or damages herein provided for -- will be paid, provided that the Contractor has furnished the Owner a sworn affidavit to the effect that all bills are paid, and no suits are pending in connection with the Work done under this Contract. Upon such final payment, the City shall be released by the Contractor from all liability whatsoever arising out of the Contract -- except for the balance, if any, of such amount as may have been retained to cover charges, claims, or damages as specified. If the City is satisfied that no charges, claims, or damages exist or will arise, no such amount will be retained.

f) Retainage reductions determinations for any portion of the Contract Amount shall be made in the best interest of the City but at no time prior to the issuance of the Certificate of Substantial Completion.

SECTION 11

LABOR REQUIREMENTS

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SECTION	11.1	Compliance with Local, State, and Federal Labor Standard Requirements
	11.2	Equal Opportunity Employment
	11.3	E-Verify

11.1. Compliance with Local, State and Federal Labor Standard Requirements:

The Contractor shall comply with all applicable local, state, and federal labor laws and regulations to the extent applicable to this project.

11.2. Equal Opportunity Employment:

The Contractor shall not discriminate on the basis of race, color, national origin, gender, age, familial status, handicapped status, veteran status, and/or religion in performing the work governed by this contract. The City is an Equal Opportunity Employer (EOE) and as such encourages all contractors to comply with EOE regulations. Any subcontract the Contractor may enter into shall include this clause with the same degree of application being encouraged.

11.3. E-Verify

Obligation for State Funded Contracts:

Executive Order 11-116, which supersedes Executive Order 11-02, directs all agencies under the direction of the Governor to verify the employment eligibility of all new agency employees through the U.S. Department of Homeland Security's E-Verify system. Further, agencies are directed to include as a condition of all contracts for the provision of goods or services to the state in excess of nominal value, an express requirement that contractors utilize the U.S. Department of Homeland Security's E-Verify system to verify the employment eligibility of all new employees hired by the contractor during the contract term, and an express requirement that contractors include in such subcontracts the requirement that subcontractors performing work or providing services pursuant to the state contract utilize the E-Verify system to verify the employment eligibility of all new employees hired by the subcontractor during the contract term.

In accordance with Executive Order 11-116, City of Titusville requires all vendors doing business with the City who are awarded state-funded contracts to verify employee eligibility using the E-verify system. It is the responsibility of the awarded vendor to ensure compliance with E-verify requirements (as applicable). To enroll in E-Verify, employers should visit the E-Verify website (http:// www.uscis.govle-verify) and follow the instructions. The employer must, as usual, retain the 1-9 Forms for inspection.

The forms listed below will be supplied by the successful contractor for approval by the City as to form and use.

SECTION 12

CONTRACTOR FORMS

INDEX

SECTION	12.1	Change Order
	12.2	Certificate of Substantial Completion
	12.3	Pay Estimate
	12.4	Subcontractors Supplier's Certificate
	12.5	Shop Drawing Submittal
	12.6	Field Order
	12.7	Contractors Request for Information
	12.8	Request Proposal for Proposed Change
	12.9	Certificate of Completion

SECTION 13

SUPPLEMENTAL

INDEX

SECTION	13.1	Grant Requirements
	13.2	Auditing
	13.3	Giving Notice
	13.4	Computation of Time
	13.5	General

13.1. Grant Requirements

The parties hereto acknowledge and accept that funding for this project may result from grants, appropriations, loans, etc., secured by the Owner. As such, any stipulations set forth in the grant agreements between the City and the grantor(s) shall be imposed on the Contractor in fulfillment of applicable requirements. The Contractor shall be made fully aware of these requirements prior to beginning the Work and shall be held fully liable once so notified. The City shall evaluate all requirements set forth by the grantors and estimate the impact to the Contractor. Compensable items shall be negotiated and subject to the determination of the Purchasing & Contracting Administrator.

13.2. Auditing

The City reserves the right to audit all fiscal records, payroll records or other pertinent records associated with the performance of this contract.

13.3. Giving Notice

Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or if delivered at or sent registered or certified mail, postage prepaid, to the last business address known to the giver of the notice. Notices to the City shall be posted as follows:

Purchasing & Contracting Administrator
City of Titusville
555 S. Washington Avenue
Titusville, FL 32796

13.4. Computation of Time

a) When any period of time is referred to in the Contract Documents by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted form the computation.

b) A calendar day of twenty-four hours measured from midnight to the next midnight shall constitute a day.

13.5. General

a) Should Owner or Contractor suffer injury or damage to person or property because of any error, omission or act of the other party or of any of the other party's employees or agents or other for whose acts the other party is legally liable, claim will be made in writing to the other party within a reasonable time of the first observance of such injury or damage. The provisions of this paragraph shall not be construed as a substitute for or a waiver of the provisions of any applicable statute of limitations or repose.

b) The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto, and, in particular but without limitation, the warranties, guarantees and obligations imposed upon Contractor by applicable clauses and all of the rights and remedies available to Owner and Engineer thereunder, are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee or by other provisions of the contract documents, and the provisions of this paragraph will be as effective as if repeated specifically in the contract documents in connection with each particular duty, obligation, right and remedy to which they apply. All representations, warranties and guarantees made in the Contract Documents will survive final payment and termination or completion of the Agreement.

CONTRACT & BID FORMS

INDEX

1. Bid Proposal Form
2. Bid Price Sheet
3. Bid Bond
4. Certificate – Contract Execution Authorization
5. Affidavit
6. Performance By Subcontractors
7. Bidder Qualification Questionnaire
8. Florida Trench Safety Act
9. Public Entity Crimes Certification
10. Scrutinized Companies Certificate: Pursuant To Florida Statute § 287.135
11. E-Verify Affidavit
12. Drug-Free Workplace Certification
13. Debarment
14. Certification Regarding EEO
15. Certification of Non-segregated Facilities
16. Form Of Non- Collusion
17. Certification of Compliance with ARPA Supplemental Conditions
18. Disclosure Form Foreign Influence
19. Contractor's Final Affidavit and Release Of Lien
20. Performance & Payment Bond
21. Contractor's Release of Lien

PLEASE COMPLETE AND SUBMIT WITH BID

BID PRICE PROPOSAL
(Bid Form)

Project Identification: **Replacement of Seminole Lift Station & Demolition of Bayview Lift Station**

Project Bid No.: **26B004LR**

TO: CITY OF TITUSVILLE:

In accordance with your advertisement inviting bids to be received at City Hall Purchasing & Contracting Division, 555 South Washington Avenue, Titusville, Florida, 32796 this Bid Proposal is submitted for the above captioned project.

NAME OF BIDDER:	DATE:
BUSINESS ADDRESS: PHONE NUMBER: FAX NUMBER: EMAIL ADDRESS:	
BIDDER'S SIGNATURE & TITLE:	
CONTRACTOR'S FLORIDA LICENSE NUMBER (S):	
CITY OF TITUSVILLE BUSINESS TAX RECEIPT NUMBER:	
FEID # _____	**SAMS REGISTRATION** #_____

BIDDER DECLARATION/ACKNOWLEDGEMENT

THIS BID IS SUBMITTED TO THE CITY OF TITUSVILLE (AKA – OWNER):

1. The undersigned Bidder proposes and agrees, if this bid is accepted, to enter into an Agreement with the City, in the form provided herein, to perform and furnish all Work specified or indicated in the Contract Documents for the Contract Price and within the Contract Time indicated in this Bid Form and the Agreement, and in accordance with the other terms and condition of the Contract Documents and Instructions to Bidders made a binding part of this bid.

2. Bidder accepts all of the terms of the Bidding Documents including without limitation those addressing the disposition of the Bid Bond.

3. This bid will remain open for a period of ninety (90) consecutive calendar days after the date of the bid opening.

4. In submitting this Bid, the Bidder further represents and warrants as follows:
   a. Bidder has familiarized itself with the nature and extent of the Contract Documents, Work, site conditions, locality, all applicable laws, regulations, jurisdictions, etc., which may affect cost, progress of the Work, performance or furnishing of necessary materials for the Work.
   b. Bidder has carefully studied all reports of explorations and tests of subsurface conditions at or contiguous to the site and all drawings of physical conditions in or relating to existing surface of subsurface structures at or contiguous to the site (except Underground facilities) which have been identified in the supplementary conditions as provided for herein. BIDDER accepts determinations set forth hereby to the extent that "technical data" contained in such reports and drawings upon which BIDDER is entitled to rely as limited by the provisions associated with the data. BIDDER acknowledges that such reports and drawings are not Contract Documents and may not be complete for BIDDER'S purposes. BIDDER acknowledges that OWNER does not assume responsibility for the accuracy or completeness of information and data shown or indicated in the Bidding Documents with respect to Underground Facilities at or contiguous to the site.
   c. BIDDER has obtained and carefully studied (or assumes responsibility for having done so) all such additional or supplementary examinations, investigations, explorations, tests, studies and data concerning conditions (surface, subsurface and underground facilities) at or contiguous to the site or otherwise which may affect cost progress, performance or furnishing of the Work or which relate to any aspect of the means, methods, techniques, sequences and procedures of construction to be employed by BIDDER and safety precautions and program incident thereto. BIDDER does not consider that any additional examinations, investigations, explorations, tests, studies or data are necessary for the determination of this Bid for performance and furnishing of the Work in accordance with the times, price and other terms and conditions of the Contract Documents.
   d. BIDDER is aware of the general nature of Work to be performed by OWNER and others at the site that relates to Work for which this Bid is submitted as indicated in the Contract Documents.
   e. BIDDER has correlated the information known to BIDDER, information and observations obtained from visits to the site, reports and drawings identified in the Contract Documents and all additional examinations, investigations, explorations, tests, studies and date with the Contract Documents.
   f. BIDDER has given OWNER written notice of all conflicts, errors, ambiguities or discrepancies that BIDDER has discovered in the Contract Documents and the written resolution thereof by CITY is acceptable to BIDDER, and the Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performing and furnishing the Work for which this Bid is submitted.
   g. This Bid is genuine and not made in the interest of or on behalf of any undisclosed person, firm or corporation and is not submitted in conformity with any agreement or rules of any group, association, organization or corporation; BIDDER has not directly or

indirectly induced or solicited any other Bidder to submit a farce or sham Bid; BIDDER has not solicited or induced any person, firm, or corporation to refrain from bidding; and BIDDER has not sought by collusion to obtain for itself any advantage over any other Bidder or over OWNER.

h. BIDDER hereby agrees to commence WORK under this contract on or before a date to be specified in the NOTICE TO PROCEED and to fully complete all work of the PROJECT within the Contract Time specified in the Construction Contract. BIDDER further accepts the provisions of the Construction Contract as to liquidated damages and agrees to pay as liquidated damages the amount stated in the Construction Contract and General Conditions, for each consecutive calendar day completion of the Work is delayed.

Completion Schedule

1) The Project shall be complete in ___ **consecutive calendar days** from the official Notice to Proceed.

5. All bid items shall include all materials, equipment, labor, permit fees, taxes, tests, miscellaneous costs of all types, overhead, and profit for the item to be complete, in place, and ready for operation in the manner contemplated by the Contract Documents.

6. In accordance with Instructions to Bidders, if the Contract is to be awarded, it will be awarded on the basis of the lowest "Total Base Bid" after adjustments for additive or deductive alternates. Additive or deductive alternates (if any) will be considered in determining the lowest responsive, responsible Bidder. The OWNER reserves the right to accept any or all additive or deductive alternates, in his sole discretion, prior to the award of the Contract. The OWNER also reserves the right to delete any portion of the Work as shown in the bid schedule prior to award and adjust each bidder's "Total Bid" accordingly.

7. The documents are attached to and made a condition of this Bid. PLEASE NOTE YOUR ACKNOWLEDGEMENT BY INITIALING IN SPACE PROVIDED ON PAGE 2 BID CHECKLIST.

Having carefully examined the Bid Documents, comprised of the plans, specifications, and all other documents bound herewith and or referenced hereby, any addenda or bulletin as prepared or sanctioned by the City and being familiar with the various conditions affecting the work, the Bidder proposes and agrees, if this Proposal is accepted, to execute all appropriate Contract Documents for the purpose of establishing a formal contractual relationship between him and the City, for the furnishing of all materials and the performance of all Work to which this bid proposal pertains and for which the following total bid is submitted:

SCHEDULE OF BID FORM FOR

Replacement of Seminole Lift Station & Demolition of Bayview Lift Station

Bid #26B004 LR

BASE BID ITEMS					
Item No.	**Description**	**No. of Units**	**Units**	**Unit Price**	**Subtotal**
GENERAL					
1	Bonds and Insurance	1	LS	$	$
2	Indemnification	1	LS	$	$
3	Mobilization and Demobilization (Not greater than 2.5% of Base Bid)	1	LS	$	$
4	Maintenance of Traffic	1	LS	$	$
5	Erosion and Sedimentation Control	1	LS	$	$
CIVIL					
	Gravity Sewer				
6	12-inch PVC Gravity Sewer Piping 0-8 Feet Deep	360	LF	$	$
7	12-inch PVC Gravity Sewer Piping 8-10 Feet Deep	580	LF	$	$
8	12-inch PVC Gravity Sewer Piping 10-12 Feet Deep	290	LF	$	$
9	10-inch PVC Gravity Sewer Piping	30	LF	$	$
10	12-inch DR-18 Gravity Sewer Piping	20	LF	$	$
11	Sewer Manhole 7 Feet Deep	1	EA	$	$
12	Sewer Manhole 9 Feet Deep	2	EA	$	$
13	Sewer Manhole 10.5 Feet Deep	1	EA	$	$
14	Sewer Manhole 11.5 Feet Deep	2	EA	$	$
15	Pavement	3,050	SY	$	$
	Bayview Lift Station				
16	Demolition of Bayview Lift Station	1	LS	$	$
	Seminole Lift Station				
17	Construct Precast Wet Well	1	LS	$	$
18	Construct Lift Station and All Associated Appurtenances	1	LS	$	$
19	Submersible Pump	2	EA	$	$
20	8-inch DIP Force Main (wet well)	42	LF	$	$
21	8-inch DIP Force Main and Fittings (above ground)	35	LF	$	$
22	8-inch Magnetic Flow Meter	1	EA	$	$
23	8-inch DIP Force Main (buried RJ)	50	LF	$	$
24	8-inch DIP Tee	1	EA	$	$
25	8-inch DIP 90 degree bend (buried RJ)	3	EA	$	$
26	8-inch DIP 45 degree bend (buried RJ)	1	EA	$	$

27	8-inch Gate Valve	1	EA	$	$
28	8-inch Tapping Sleeve and Valve	1	EA	$	$
29	8-inch DIP Emergency Pump-out Connection	1	LS	$	$
30	8-inch Plug Valve	3	EA	$	$
31	8-inch Check Valve	2	EA	$	$
32	8-inch Tapping Sleeve and Valve	1	EA	$	$
33	Air Release Valve	2	EA	$	$
34	Pressure Regulating Valve	2	EA	$	$
35	Pipe Support	10	EA	$	$
36	Fence	200	LF	$	$
37	Gate	1	EA	$	$
38	Concrete Driveway, Walkways, Pads	100	SY	$	$
39	Generator Pad	14	CY	$	$
40	Retaining Walls	1	LS	$	$
41	Bollards	2	EA	$	$
42	Guardrail	LF	26	$	$
43	Sod	SF	7,300	$	$
44	Relocate Water Service, Backflow, and Hose Bib	1	LS	$	$
45	Restore Curb and Gutter	20	LF	$	$
46	Demolition of Seminole Lift Station	1	LS	$	$
ELECTRICAL					
47	Construct Electrical Equipment	1	LS	$	$
48	Standby Generator	1	LS	$	$
TOTAL BID PRICE					**$ -**

Bidder proposes to do the Work for the above Bid for (words)

_____

_____ **($) .**

THE ABOVE BID QUANTITIES ARE THE CITY'S ESTIMATED REQUIREMENTS AND WILL BE USED SOLELY FOR BID EVALUATION AND CONTRACT AWARD PURPOSES. THESE QUANTITIES DO NOT CONSTITUTE A GUARANTEE OF WORK OR INTENT THEREOF. THE CITY DOES NOT REPRESENT THAT THE ACTUAL QUANTITIES OF WORK PERFORMED WILL CORRESPOND WITH THE ABOVE BID QUANTITIES. FURTHERMORE, THE CONTRACTOR SHALL NOT PLEAD MISUNDERSTANDING OR DECEPTION BECAUSE OF QUANTITIES OR OF THE CHARACTER, LOCATION OR OTHER CONDITIONS PERTAINING TO THE WORK.

CONTRACTOR AGREES THAT PAYMENTS, FOR SATISFACTORY WORK PERFORMED, WILL BE BASED ON THE ACTUAL QUANTITIES OF WORK INSTALLED, AND THE ACTUAL QUANTITIES MAY BE GREATER THAN OR LESS THAN THE ABOVE BID QUANTITIES.

CONTRACTOR'S BID PRICES SHALL INCLUDE ALL SUPERVISION, LABOR, MATERIALS, EQUIPMENT, TOOLS, TRANSPORTATION, ADMINISTRATION, OVERHEAD AND PROFIT, AND ANY OTHER INCIDENTALS REQUIRED TO COMPLETE THE WORK TO THE CITY'S SATISFACTION AND READY FOR USE. NO SEPARATE PAYMENT WILL BE MADE FOR ANY OTHER ITEMS, REQUIRED TO BE PERFORMED BY THE CONTRACTOR TO COMPLETE THE WORK, WHICH ARE NOT CONTAINED IN THE ABOVE BID SCHEDULE. ACCORDINGLY, THE CONTRACTOR MUST INCLUDE ALL THE COSTS, FOR THE WORK AND THE SERVICES REQUIRED TO BE PERFORMED OR PROVIDED BY THE CONTRACTOR, IN THE CONTRACTOR'S BID PRICES FOR THE PAY ITEMS CONTAINED ABOVE.

THE FOLLOWING ITEMS AND THE COST OF SUCH WORK ARE SOME EXAMPLES OF WORK FOR WHICH NO PAY ITEMS HAVE BEEN ESTABLISHED AND CONSEQUENTLY THE CONTRACTOR MUST INCLUDE SUCH COSTS IN THE ABOVE BID ITEMS:

1. Maintaining and supporting existing above ground and below ground utility structures,
2. All other General Conditions including insurance, bonding, providing proper safety and sanitary facilities for workers, etc.
3. Any other required work or service not included in the Schedule of Bid Items.

The City reserves the right to award the contract to either the firm that submits the lowest "Bid Total Price" or the firm that submits the lowest bid price resulting from adding unit prices, provided that said bid is both responsive and responsible.

COMPANY NAME AND ADDRESS:	PHONE #_____ FAX #_____ E-MAIL: _____ FEIN #_____ DUNS# _____ SAMS #_____
AUTHORIZED SIGNATURE: _____ PRINTED SIGNATURE: _____ TITLE: _____	
DATE SIGNED:	

BID SECURITY

Accompanying this Proposal is a five percent (5%) **(circle one)** Certified Check, Bid Bond, Cashier's Check in the amount of Dollars ($_____) as bid security.

***Use City Bond Form**

PLEASE COMPLETE AND SUBMIT WITH BID

STATE OF FLORIDA)
COUNTY OF BREVARD) **BID BOND**
CITY OF TITUSVILLE)

KNOW ALL MEN BY THESE PRESENTS, that _____ as Principal, and _____as Surety, are held and firmly bound unto the City of Titusville, in the penal sum of _____ _____(Dollars) ($_____), lawful money of the United States of America, for the payment of which sum well and truly be made, we bid ourselves, our heirs, executors, administrators, and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas the Principal has submitted the accompanying bid dated _____, for:

_____

_____

NOW THEREFORE,

(a) The principal shall not withdraw said bid within ninety (90) days after date of opening the same, and shall within twenty (20) days after the prescribed forms are presented to him for signature, enter into a written contract with the City, in accordance with the proposal as accepted, and five bonds with good and sufficient surety or sureties, as required, for the faithful performance and proper fulfillment of such contract: and,

(b) In the event of the withdrawal of said bid within the period specified, or the failure to enter into such contract and give bond within the time specified, if the principal shall pay the City the difference between the amount specified in said bid and the amount for which the City may procure the required work and supplies, if the latter amount be in excess of the former, then the above obligation shall be void and of no effect, other wise to remain in full force and virtue.

IN WITNESS WHEREOF, the above-bounded parties have executed this instrument under their several seals, this _____ day of _____, _____, the name and corporate seal of each corporate party being hereto affixed, and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

WITNESS:

If Sole Ownership or Partnership, one (1) Witness is required. If Corporation, Secretary only will attest & affix seal.)

_____

_____

_____

Surety Secretary

PRINCIPAL:

_____

(Name of Firm)

Affix Seal

_____

(Signature of Authorized Officer)

_____

(Title)

_____

(Business Address)

_____

(City) (State) (zip)

SURETY:

_____

(Corporate Surety)

Affix Seal

_____

(Signature of Authorized Officer)

_____

(Title)

_____

(Business Address)

_____

(City) (State) (zip)

_____

(Name of Local Insurance Agency)

_____

(Address)

The rate of premium on this bond is _____ per thousand.

Total amount of premium charges _____ .

(The above must be filled in by Corporate Surety.)

PLEASE COMPLETE AND SUBMIT WITH BID

CERTIFICATES AS TO CORPORATE PRINCIPAL

I, _____, certify that I am the Secretary of the Corporation named as Principal in the within bond, that _____ who signed the said bond on behalf of _____the principal, was then _____of said corporation; that I know his signature, and his signature hereto is genuine; and that said bond was duly signed, sealed, and attested for and on behalf of said corporation by authority of its governing body.

(Corporate_____(Seal)
Secretary

STATE OF FLORIDA)
COUNTY OF BREVARD)
CITY OF TITUSVILLE)

Before me, a Notary Public duly commissioned, qualified and acting, personally appeared: _____ to me well known, who being by me first duly sworn upon oath, says that he is the attorney-in-fact for the _____, and that he has been authorized by _____ to execute the foregoing bond on behalf of the Contractor named therein in favor of the City of Titusville, Florida.

Subscribed and sworn to before me this _____ day of _____, _____,

INSTRUCTIONS: Bid Bonds must be accompanied by an affidavit and a Power of Attorney, in compliance with Instructions to Bidders.

_____
Notary Public

_____
My Commission Expires

PLEASE COMPLETE AND SUBMIT WITH BID

CERTIFICATE

I HEREBY CERTIFY that a meeting of the Board of directors of _____, corporation under the laws of the State of _____ held on the _____ day of _____, the following resolution was duly passed and adopted:

"RESOLVED, that _____, as _____ (title) of the corporation, is hereby authorized to execute the contract _____ day of _____, _____, between the CITY OF TITUSVILLE, a municipal corporation, and this corporation, and that his execution thereof, attested by the Secretary of the corporation and with corporate seal affixed shall be the official act and deed of this corporation."

I FURTHER CERTIFY that said resolution is now in full force and effect.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the official seal of the corporation this _____ day of _____, _____.

_____
Secretary

Notary Public Information

STATE OF_____

COUNTY OF _____

The foregoing instrument was acknowledged before me by means of ☐ physical presence or ☐ online notarization, this_____ day of _____, _____ , by _____.
(year) (name of person acknowledging).

_____ _____
(Print, Type, or Stamp Commissioned Name of Notary Public) (Signature of Notary Public)

Personally Known _____ OR Produced Identification _____

Type of Identification Produced _____

PLEASE COMPLETE AND SUBMIT WITH BID

STATE OF FLORIDA)
COUNTY OF BREVARD) **AFFIDAVIT**
CITY OF TITUSVILLE)

Before me, the undersigned authority, personally appeared_____

who, first being duly sworn, upon his oath deposes and says:

That he is the (contractor) (sub-contractor) on the following described public works:

JOB DESCRIPTION: _____

CONTRACTOR (SUBCONTRACTOR): _____

ADDRESS:

_____

CONTRACTING AUTHORITY: _____
PREVAILING WAGE DETERMINATION NO.: (as applicable) _____

AND FURTHER AFFIANT SAYETH NOT.

_____

Sworn to and subscribed before me this _____ day of _____, 20_____.

_____
Notary Public, State of ___ at Large

_____
My Commission Expires

The contractor shall execute and mail this affidavit to the Florida Department of Commerce, Bureau of Workers' Compensation, Ashley Building, 1321 Executive Center Drive, East, Tallahassee, FL 32301, within ten (10) days of the commencement of work. Copies should be forwarded to the office of the Purchasing & Contracting Administrator.

PLEASE COMPLETE AND SUBMIT WITH BID

PERFORMANCE OF WORK BY SUBCONTRACTORS

The BIDDER hereby states that he proposes, if awarded the Contract, to use the following subcontractors on this project: List below all proposed subcontractors and trade specialties and costs. (List only one subcontractor for each item.) Write on back or provide additional pages if additional space is needed.

NAME OF SUBCONTRACTOR	TRADE OF SUBCONTRACTOR	COST OF WORK

TOTAL: _____

PLEASE COMPLETE AND SUBMIT WITH BID

REFERENCE FORM BIDDER QUALIFICATION QUESTIONNAIRE

Submitted by _____
Name of Bidder

Contractor's License #_____
( ) An Individual ( ) A Partnership ( ) A Corporation

Federal Identification #_____

Principal Office Address:_____

_____

City of Titusville □Yes or □No: Other (City/County/Etc.) _____

Please answer the following:

1. Number of years your firm/company has been in business under present name: ____ years.
2. Is your company incorporated in the State of Florida? _____ Yes _____ No
3. Headquarter address if different from business address_____
4. How many years' experience in fuel site new and/or tank replacement projects similar in scope and size has your organization had

   As a Contractor?_____Years As a Subcontractor?_____years
5. List below (minimum 3/maximum 5) the requested information concerning projects your organization demonstrating years of experience for completed lift station replacement projects. (Use additional sheets if necessary). Include the type of work similar to the work included in this contract if possible.

(A) Business/Organization (Nam): _____

Address: _____

Contact Person (Name): _____ Telephone: _____

Fax and/or Email: _____

Date of Service: _____ Contract Total: _____

Description of Service: _____

_____

(B) Business/Organization (Name): _____

Address: _____

Contact Person (Name): _____ Telephone: _____

Fax and/or Email: _____

Date of Service: _____ Contract Total: _____

Description of Service: _____

_____

(C) Business/Organization (Name): _____

Address: _____

Contact Person (Name): _____ Telephone: _____

Fax and/or Email: _____

Date of Service: _____ Contract Total: _____

Description of Service: _____

_____

(D) Business/Organization (Name): _____

Address: _____

Contact Person (Name): _____ Telephone: _____

Fax and/or Email: _____

Date of Service: _____ Contract Total: _____

Description of Service: _____

_____

(E) Business/Organization (Name): _____

Address: _____

Contact Person (Name): _____ Telephone: _____

Fax and/or Email: _____

Date of Service: _____ Contract Total: _____

Description of Service: _____

_____

6. Have you ever failed to complete any work awarded to you? If so, where, and why?

_____

_____

7. Give below any information which would indicate the size and capacity of your organization, including number of employees, equipment owned by your organization, etc., which are available for utilization on this Contract._____

_____

I, the undersigned, do hereby declare that the foregoing statements are true and correct, all as of the date hereinafter set forth, and that those examining this document have my permission to contact any or all of those parties listed in this questionnaire. Incorrect or misleading statements in this questionnaire shall be grounds for a determination of non-responsibility with respect to such contractor.

_____

(SIGNATURE OF BIDDER)

_____

(TYPE OR PRINT COMPANY NAME)

_____

(TYPE OR PRINT ADDRESS)

PLEASE COMPLETE AND SUBMIT WITH BID

FLORIDA TRENCH SAFETY ACT
CERTIFICATION AND DISCLOSURE STATEMENT

The undersigned acknowledges the requirements of the Florida Trench Safety Act., F.S., (Section 553.60 et. seq. Florida statutes), and hereby commits the Bidder to the following in the performance of the work in the event that the subject contract is awarded to and executed by said Bidder.

1. The Bidder further acknowledges that the Florida Trench Safety Act, (the Act) establishes the Federal excavation safety standards set forth at 29 CFR Part 1926, Subpart P as the Interim State Standard until such time as the State of Florida, through its Department of Labor and Employment Security, or any successor agency, adopts, updates or revises said interim standard. This State of Florida standard may be supplemented by special shoring requirements established by the State of Florida or any of its political subdivisions.

2. The Bidder, as Contractor, shall comply with all applicable excavation/trench safety standards.

3. The Contractor shall consider the geotechnical data available from the City, if any, the Contractor's own sources, and all other relevant information in providing the trench safety system to be employed on the subject Project. The Contractor acknowledges sole responsibility for the selection of the data on which he relies in providing the safety system, as well as for the system itself.

4. The amounts that the Bidder has set forth for pipe installation includes the following excavation / trench safety measures and the linear feet of trench excavated under each safety measure. These units, costs, and unit prices shall be disclosed solely for the purpose of compliance with procedural requirements of the Act. No adjustment to the Contract time or price shall be made for any difference in the actual number of linear feet of trench excavation, except as may be otherwise provided in these Contract Documents.

Trench Safety Measure (Description)	Units of Measure (LF, SF)	Unit (Quantity)	Unit Cost	Extended Cost
a.				
b.				
c.				
d.				
e.				

For Information Only, Not for Payment Purposes $
Bidder may use additional sheets as necessary to extend this form.
Failure to complete the above may result in the bid being declared non-responsive.

5. The amount disclosed is the cost of compliance with the applicable trench safety requirements does not constitute the extent of the Contractor's obligation to comply with said standards. Contractor shall expend additional sums at no additional cost to the County, if necessary, to comply with the Act (except as may otherwise be provided).

6. Acceptance of the bid to which this certification and disclosure applies in no way represents that the County or its representative has evaluated and thereby determined that the above costs are adequate to comply with the applicable trench safety requirements nor does it in any way relieve the Contractor of its sole responsibility to comply with the applicable trench safety requirements.

_____
Company

_____
Name and Title

Address:

_____

_____

_____

Telephone:(____)_____

END OF FLORIDA TRENCH SAFETY ACT STATEMENT

PLEASE COMPLETE AND SUBMIT WITH BID

PUBLIC ENTITY CRIMES

Any person submitting a bid, Bid or reply in response to this invitation or a contract, must execute the enclosed form PUR. 7069, sworn statement under section 287.133(3)(a), FLORIDA STATUTES, ON PUBLIC ENTITY CRIMES, including proper check(s), in the space(s) provided, and enclose it with his quote, bid, or proposal. If you are submitting a quote, bid or proposal on behalf of dealers or suppliers who will ship commodities and receive payment from the resulting contract, it is your responsibility to see that copy(ies) of the form are executed by them and are included with your quote, bid, or proposal. Corrections to the form will not be allowed after the quote, bid, or Bid opening time and date. Failure to complete this form in every detail and submit it with your quote, bid, or Bid may result in immediate disqualification of your bid or proposal.

The 1989 Florida Legislature passed Senate Bill 458 creating Sections 287.132 - 133, Florida Statutes, effective July 1, 1989. Section 287.132(3)(d), Florida Statutes, requires the Florida Department of General Services to maintain and make available to other political entities a "convicted vendor" list consisting of persons and affiliates who are disqualified from public contracting and purchasing process because they have been found guilty of a public entity crime. A public entity crime is described by Section 287.133, Florida Statutes, as a violation of any State or Federal law by a person with respect to and directly related to the transaction of business with any public entity in Florida or with an agency or political subdivision of any other state or with the United States, including, but not limited to, any bid or contract for goods or services to be provided to any public entity or with an agency or political subdivision and involving antitrust, fraud, theft, bribery, collusion, racketeering, conspiracy, or material misrepresentation.

A public entity may not accept any bid, Bid or reply from, award any contract to, or transact any business in excess of the threshold amount provided in Section 287.017, Florida Statutes, for CATEGORY TWO with any person or affiliate on the convicted vendor list for a period of 36 months following the date that person or affiliate was placed on the convicted vendor list unless that person or affiliate has been removed from the list pursuant to Section 287.133(3)(f), Florida Statutes.

Therefore, effective October 1, 1990, prior to entering into a contract (formal contract or purchase order in excess of the threshold amount provided in Section 287.017, Florida Statutes, for CATEGORY TWO) to provide goods or services to **THE CITY OF TITUSVILLE**, a person shall file a sworn statement with the contracting officer or Purchasing Director, as applicable. The attached statement or affidavit will be the form to be utilized and must be properly signed in the presence of a notary public or other officer authorized to administer oaths and properly executed.

THE INCLUSION OF THE SWORN STATEMENT OR AFFIDAVIT SHALL BE SUBMITTED CONCURRENTLY WITH YOUR BID, BID OR REPLY DOCUMENTS. NON-INCLUSION OF THIS DOCUMENT MAY NECESSITATE REJECTION OF YOUR QUOTE, BID OR BID.

SWORN STATEMENT UNDER SECTION 287.133(3)(a), FLORIDA STATUTES,
ON **PUBLIC ENTITY CRIMES**

THIS FORM MUST BE SIGNED IN THE PRESENCE OF A NOTARY PUBLIC OR OTHER OFFICER AUTHORIZED TO ADMINISTER OATHS.

1. This sworn statement is submitted with the _____. Bid/Bid for THE CITY OF TITUSVILLE.

2. This sworn statement is submitted by _____ whose business address is _____ and (if applicable) its Federal Employer Identification (FEIN) is _____.

3. My name is _____ (please print name of individual signing) and my relationship to the entity named above is _____.

4. I understand that a "public entity crime" as defined in Paragraph 287.133(1)(g), Florida Statutes, means a violation of any state or federal law by a person with respect to and directly related to the transaction of business with any public entity or with an agency or political subdivision of any other state or with the United States, including, but not limited to, any bid, Bid, reply or contract for goods or services, any lease for real property, or any contract for the construction or repair of a public building or public work, involving antitrust, fraud, theft, bribery, collusion, racketeering, conspiracy, or material misrepresentation.

5. I understand that "convicted" or "conviction" as defined in Paragraph 287.133(1)(b), Florida Statutes, means a finding of guilt or a conviction of a public entity crime, with or without an adjudication of guilt, in any federal or state trial court of record relating to charges brought by indictment or information after July 1, 1989, as a result of a jury verdict, nonjury trial, or entry of a plea of guilty or nolo contendere.

6. I understand that an "affiliate" as defined in Paragraph 287.133(1)(a), Florida Statutes, means:

(1) A predecessor or successor of a person convicted of a public entity crime; or

(2) An entity under the control of any natural person who is active in the management of the entity and who has been convicted of a public entity crime. The term "affiliate" includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in the management of an affiliate. The ownership by one person of shares constituting a controlling interest in another person, or a pooling of equipment or income among persons when not for fair market value under an arm's length agreement, shall be a prima facie case that one person controls another person. A person who knowingly enters into a joint venture with a person who has been convicted of a public entity crime in Florida during the preceding 36 months shall be considered an affiliate.

7. I understand that a "person" as defined in Paragraph 287.133(1)(e), Florida Statutes, means any natural person or entity organized under the laws of any state or of the United States with the legal power to enter into a binding contract and which bids or applies to bid on contracts let by a public entity, or which otherwise transacts or applies to transact business with a public entity. The term "person" includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in management of an entity.

8. Based on information and belief, the statement which I have marked below is true in relation to the entity submitting this sworn statement. (Please indicate which statement applies.)

_____ Neither the entity submitting this sworn statement, nor any officers, directors, executives, partners, shareholders, employees, members, or agents who are active in management of the entity, nor any affiliate of the entity have been charged with and convicted of a public entity crime subsequent to July 1, 1989.

_____ The entity submitting this sworn statement, or one or more of the officers, directors, executives, partners, shareholders, employees, members or agents who are active in management of the entity, or an affiliate of the entity has been charged with and convicted of a public entity crime subsequent to July 1, 1989, AND (Please indicate which additional statement applies.)

_____ There has been a proceeding concerning the conviction before a hearing officer of the State of Florida, Division of Administrative Hearings. The final order entered by the hearing officer did not place the person or affiliate on the convicted vendor list. (Please attach a copy of the final order.)

_____ The person or affiliate was placed on the convicted vendor list. There has been a subsequent proceeding before a hearing officer of the State of Florida, Division of Administrative Hearings. The final order entered by the hearing officer determined that it was in the public interest to remove the person or affiliate from the convicted vendor list. (Please attach a copy of the final order.)

_____ The person or affiliate has not been placed on the convicted vendor list. (Please describe any action taken by or pending with the Department of General Services.)

_____
(Signature)

Date: _____

Notary Public Information

STATE OF_____

COUNTY OF _____

The foregoing instrument was acknowledged before me by means of ☐ physical presence or ☐ online notarization, this_____ day of _____, _____ , by _____.
(year) (name of person acknowledging).

_____ _____
(Print, Type, or Stamp Commissioned Name of Notary Public) (Signature of Notary Public - State of Florida)

Personally Known _____ OR Produced Identification _____

Type of Identification Produced _____

PLEASE COMPLETE AND SUBMIT WITH BID

CONTRACTOR AFFIDAVIT REGARDING SCRUTINIZED COMPANY LIST

Awarded Contractor shall certify that it and its subcontractors are not on the Scrutinized Companies that Boycott Israel List. Pursuant to Section 287.135, F.S. If the Agreement is for more than $1,000,000 the Contractor further certifies that it and its subcontractors are also not on the Scrutinized Companies with Activities in Sudan, Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, or engaged with business operations in Cuba or Syria as identified in Section 287.135, F.S. For Contracts of any amount, if the City determines the Contractor submitted a false certification under Section 287.135(5) of the Florida Statutes, or if the Contractor has been placed on the Scrutinized Companies that Boycott Israel List, or is engaged in a boycott of Israel, the City shall either terminate the Contract after it has given the Contractor notice and an opportunity to demonstrate the City's determination of false certification was in error pursuant to Section 287.135(5)(a) of the Florida Statutes, or on a case-by-case basis the City may choose to maintain the Contract if the conditions of Section 287.135(4) of the Florida Statutes are met. For Contracts $1,000,000 and greater, if the City determines the Contractor submitted a false certification under Section 287.135(5) of the Florida Statutes, or if the Contractor has been placed on the Scrutinized Companies with Activities in the Sudan List, or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, the City shall either terminate the Contract after it has given the Contractor notice and an opportunity to demonstrate the City's determination of false certification was in error pursuant to Section 287.135(5)(a) of the Florida Statutes, or on a case-by-case basis the City may choose to maintain the Contract if the conditions of Section 287.135(4) of the Florida Statutes are met.

The Affiant, by virtue of the signature below, certifies that:

1. The Business address of _____ (name of bidder or contractor) is_____.
2. My relationship to _____ (name of bidder or contractor) is_____ (relationship such as sole proprietor, partner, president, vice president).
3. I understand that "Boycott of Israel" has the same meaning as defined in §215.4725, Florida Statutes, and means refusing to deal, terminating business activities, or taking other actions to limit commercial relations with Israel, or persons or entities doing business in Israel or in Israeli controlled territories, in a discriminatory manner. A statement by a company that it is participating in a boycott of Israel, or that it has initiated a boycott in response to a request for a boycott of Israel or in compliance with, or in furtherance of, calls for a boycott of Israel, may be considered by the State Board of Administration to be evidence that a company is participating in a boycott of Israel. The term does not include restrictive trade practices or boycotts fostered or imposed by foreign countries against Israel.
4. I understand that "business operations" means, for purposes specifically related to Cuba or Syria, engaging in commerce in any form in Cuba or Syria, including, but not limited to, acquiring, developing, maintaining, owning, selling, possessing, leasing, or operating equipment, facilities, personnel, products, services, personal property, real property, military equipment, or any other apparatus of business or commerce.

5. _____ (name of the bidder or contractor) is not on the Scrutinized Companies that Boycott Israel List, created pursuant to s. 215.4725, Florida Statutes, or is engaged in a boycott of Israel.
6. _____ (name of the bidder or contractor) is not on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, created pursuant to s. 215.473, Florida Statutes.
7. _____ (name of the bidder or contractor) is not engaged in business operations in Cuba or Syria.

_____

Signature Printed Name Title Name of bidder or contractor

Notary Public Information

STATE OF_____

COUNTY OF _____

The foregoing instrument was acknowledged before me by means of ☐ physical presence or ☐ online notarization, this_____ day of _____, _____ , by _____.
(year) (name of person acknowledging).

_____ _____

(Print, Type, or Stamp Commissioned Name of Notary Public) (Signature of Notary Public -)

Personally Known _____ OR Produced Identification _____

Type of Identification Produced _____

PLEASE COMPLETE AND SUBMIT WITH BID

City of Titusville
E-Verify Affidavit

Obligation for State Funded Contracts:

Executive Order 11-116, which supersedes Executive Order 11-02, directs all agencies under the direction of the Governor to verify the employment eligibility of all new agency employees through the U.S. Department of Homeland Security's E-Verify system. Further, agencies are directed to include as a condition of all contracts for the provision of goods or services to the state in excess of nominal value, an express requirement that contractors utilize the U.S. Department of Homeland Security's E-Verify system to verify the employment eligibility of all new employees hired by the contractor during the contract term, and an express requirement that contractors include in such subcontracts the requirement that subcontractors performing work or providing services pursuant to the state contract utilize the E-Verify system to verify the employment eligibility of all new employees hired by the subcontractor during the contract term.

In accordance with Executive Order 11-116, City of Titusville requires all vendors doing business with the City who are awarded state-funded contracts to verify employee eligibility using the E-Verify system. It is the responsibility of the awarded vendor to ensure compliance with E-Verify requirements (as applicable). To enroll in E-Verify, employers should visit the E-Verify website (http:// www.uscis.govle-verify) and follow the instructions. The employer must, as usual, retain the 1-9 Forms for inspection.

By affixing your signature below, you hereby affirm that you will comply with E-Verify requirements.

Federal Employer Identification Number (FEIN): _____

_____ _____ _____
Printed Name of Affiant Printed Title of Affiant Signature of Affiant

_____ _____
Name of Contractor Date

_____ _____ _____
Address of Contractor State Zip Code

Notary Public Information

STATE OF_____

COUNTY OF _____

The foregoing instrument was acknowledged before me by means of ☐ physical presence or ☐ online notarization, this_____ day of _____, _____ , by _____.
(year) (name of person acknowledging).

_____ _____
(Print, Type, or Stamp Commissioned Name of Notary Public) (Signature of Notary Public -)

Personally Known _____ OR Produced Identification _____

Type of Identification Produced _____

PLEASE COMPLETE AND SUBMIT WITH BID

DRUG-FREE WORKPLACE CERTIFICATION

In case of tie bids, preference must be given to vendors submitting a certification with their bid/ Bid certifying they have a drug-free workplace in accordance with Section 287.087, Florida Statutes. The drug-free certification form below must be signed and returned with your bid.

In order to have a drug-free workplace program, a business shall:

(1) Publish a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the workplace and specifying the actions that will be taken against employees for violations of such prohibition. (2) Inform employees about the dangers of drug abuse in the workplace, the business' policy of maintaining a drug-free workplace, any available drug counseling, rehabilitation, and employee assistance programs, and the penalties that may be imposed upon employees for drug abuse violations. (3) Give each employee engaged in providing the commodities or contractual services that are under bid a copy of the statement specified in the first paragraph. (4) In the statement specified in the first paragraph, notify the employees that, as a condition of working on the commodities or contractual services that are under bid, the employee will abide by the terms of the statement and will notify the employer of any conviction of, or plea of guilty or nolo contendere to, any violation of chapter 893 or of any controlled substance law of the United States or any state, for a violation occurring in the workplace no later than five (5) days after such conviction. (5) Impose a sanction on, or require the satisfactory participation in a drug abuse assistance or rehabilitation program if such is available in the employee's community, by any employee who is so convicted. (6) Make a good faith effort to continue to maintain a drug-free workplace through implementation of this section.

As the person authorized to sign the statement, I certify that this Contractor complies fully with the above requirements.

_____

Vendor's Signature, Title, Date

Notary Public Information

STATE OF_____

COUNTY OF _____

The foregoing instrument was acknowledged before me by means of ☐ physical presence or ☐ online notarization, this_____ day of _____, _____ , by _____.

(year) (name of person acknowledging).

_____ _____

(Print, Type, or Stamp Commissioned Name of Notary Public) (Signature of Notary Public -)

Personally Known _____ OR Produced Identification _____

Type of Identification Produced _____

PLEASE COMPLETE AND SUBMIT WITH BID

CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

Contractor Covered Transactions

(1) The prospective contractor _____ of the City of Titusville, certifies, by submission of this document, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.

(2) Where the Recipient's contractor is unable to certify to the above statement, the prospective contractor shall attach an explanation to this form.

CONTRACTOR: _____

Signature

Name and Title

_____

Street Address

_____

_____

City, State, Zip

Date

CITY OF TITUSVILLE: _____

Contract Number

PLEASE COMPLETE AND SUBMIT WITH BID

CERTIFICATION OF BIDDER
REGARDING EQUAL EMPLOYMENT OPPORTUNITY

INSTRUCTIONS

This certification is required pursuant to Executive Order 11246 (30 F.R. 12319-25). The implementing rules and regulations provide that any bidder or prospective Consultant, or any of their proposed subconsultants, shall state as an initial part of the bid or negotiations of the contract whether it has participated in any previous contract or subcontract subject to the equal opportunity clause; and, if so, whether it has filed all compliance reports due under applicable instructions.

Where the certification indicates that the bidder has not filed a compliance report due under applicable instructions, such bidder shall be required to submit a compliance report within seven calendar days after bid opening. No contract shall be awarded unless such a report is submitted.

CERTIFICATION BY BIDDER

NAME AND ADDRESS OF BIDDER (Include ZIP Code)

1. Bidder has participated in a previous contract or subconsultant subject to the Equal Opportunity Clause.

   _____ Yes _____No

2. Compliance reports were required to be completed in connection with such contract or subcontract.

   _____ Yes _____ No

3. Bidder has filled all compliance reports due under applicable instructions.

   _____ Yes _____ No

4. Have you ever been or are you being considered for sanction due to violation of Executive Order 11246, as amended? _____Yes _____No

_____

NAME AND TITLE OF SIGNER (Please type)

SIGNATURE DATE

PLEASE COMPLETE AND SUBMIT WITH BID

FORM OF NON-COLLUSION AFFIDAVIT

(This Afffdavit is Part of Bid)

BID CERTIFICATION FORM OF NON-COLLUSION AFFIDAVIT

(This Affidavit is Part of Bid) STATE OF _____)

) SS.

COUNTY OF_____)

being first duly sworn, deposes and says that he is _____

_____(Sole owner, a Partner, President, Secretary, etc.)_____

of

the party making the foregoing Bid or Bid that such Bid is genuine and not collusive or sham; that said BIDDER has not colluded, conspired, connived, or agreed, directly or indirectly, with any BIDDER or person, to put in a sham Bid, or that such other person shall refrain from bidding, and has not in any manner, directly or indirectly sought by agreement or collusion, or communication or conference, with any person, to fix the Bid Price of affiant or any other BIDDER, or to fix any overhead, profit or cost element of said Bid Price, or of that of any other BIDDER, or to secure any advantage against CITY any person interested in the proposed Contract; and that all statements in said Bid or Bid are true; and further, that such BIDDER has not, directly or indirectly submitted this BID, or the contents thereof, or divulged information or date relative thereto to any association or to any member or agent thereof.

_____

(Bidder)

Notary Public Information

STATE OF_____

COUNTY OF _____

The foregoing instrument was acknowledged before me by means of ☐ physical presence or ☐ online notarization, this_____ day of _____, _____ , by _____.
(year) (name of person acknowledging).

_____ _____

(Print, Type, or Stamp Commissioned Name of Notary Public) (Signature of Notary Public -)

Personally Known _____ OR Produced Identification _____ Type of Identification Produced _____

PLEASE COMPLETE AND SUBMIT WITH BID

DISCLOSURE FORM
FOREIGN INFLUENCE ON CONTRACTS OR GRANTS HAVING A VALUE OF $100,000 OR MORE

Summary of Form: In order for the City to comply with section 286.101, Florida Statutes, all prospective contractors and grant recipients seeking to contract with the City, or receive a grant from the City, where said contract or grant has a value of $100,000 or more must disclose to the City (1) any current or prior interest of, (2) any contract with, or (3) any grant or gift received from a foreign country of concern (defined as the People's Republic of China, the Russian Federation, the Islamic Republic of Iran, the Democratic People's Republic of Korea, the Republic of Cuba, the Venezuelan regime of Nicolas Maduro, and the Syrian Arab Republic, or an agency or other entity under the significant control of such foreign country of concern) if such interest, contract, or grant or gift has a value of $50,000 or more and such interest existed at any time or such contract or grant or gift was received or in force at any time during the previous five years. The disclosure is specified below. Within one year before applying for any grant or proposing any Contract, such entity must provide a copy of such disclosure to the Department of Financial Services. Disclosure is not required in certain circumstances, outlined below. A Contract is any agreement for the direct benefit or use of any party to such agreement, including an agreement for the sale of commodities or services. A Gift is any transfer of money or property from one entity to another without compensation. A Grant is a transfer of money for a specified purpose, including a conditional gift. An interest in an entity means any direct or indirect investment in or loan to the entity valued at 5 percent or more of the entity's net worth or any form of direct or indirect control exerting similar or greater influence on the governance of the entity.

I. SECTION I. Please answer yes or no to each statement below:

YES / NO I AM BIDDING ON A CONTRACT/APPLYING FOR A GRANT WITH A POTENTIAL VALUE UNDER $100,000. If yes, this disclosure form has been completed. Please sign and date at the bottom.

YES / NO I AM BIDDING ON A CONTRACT/APPLYING FOR A GRANT WITH A POTENTIAL VALUE OF OVER $100,000. If yes, proceed to the next question.

YES / NO I HAVE MADE A FOREIGN INFLUENCE DISCLOSURE ONLINE WITH THE DEPARTMENT OF FINANCIAL SERVICES. If yes, please proceed to SECTION IV and provide the date of the disclosure, your name and address. Then sign and date at the bottom.

SECTION II. Please answer yes or no to the statement below:

YES / NO Bidder/Grantee has (1) a current or prior interest of, any contract with, or any grant or gift received from a foreign country of concern (defined as the People's Republic of China, the Russian Federation, the Islamic Republic of Iran, the Democratic People's Republic of Korea, the Republic of Cuba, the Venezuelan Regime of Nicolas Maduro, and the Syrian Arab Republic, or an agency or other entity under the significant control of such foreign country of concern); and (2) such interest, contract, or grant or gift has a

value of $50,000 or more; and (3) such interest existed, or such contract or grant or gift was received or in force at any time during the previous five years.

SECTION III. If you answered NO to SECTION II, you have completed this form. Please sign/date at the bottom. If you answered YES to SECTION II, then answer YES or NO to the following:

YES / NO This is a proposal to sell commodities through an online procurement programs established pursuant to section 287.057(22), Florida Statutes.

YES / NO This is a proposal from an entity that discloses foreign gifts or grants under section 1010.25 or section 286.101(2), Florida Statutes.

YES / NO This is a proposal from a foreign source that, if granted or accepted, would be disclosed under section 286.101(2) or section 1010.25, Florida Statutes.

YES / NO This is a proposal from a public or not-for-profit research institution with respect to research funded by any federal Agency.

SECTION IV. If you answered YES to any question in SECTION III, you have completed this form. Please sign/date at the bottom. If you answered NO to all of the questions in SECTION III, then you must make the following disclosures online to the State of Florida Department of Financial Services before the County may contract with you or award you said grant. Please disclose the following:

Date Disclosure of the information below was made by Bidder/Grantee to the State of Florida Department of Financial Services online: _____

Name of Bidder/Grantee: _____

Mailing Address of Bidder/Grantee: _____

Value of the Contract/Grant or Gift: _____

Foreign Country of Concern or the Agency or other entity under the significant

Control of such Foreign country of Concern: _____

Date of Termination of the contract or interest with the Foreign Country of Concern:

Date of Receipt of the Contract/Grant or Gift: _____

Name of the agent or controlled entity that is the source or interest holder:

_____

I verify that the information provided on this form is true and correct, and that I am duly authorized to make said binding disclosures on behalf of myself or my Company, as applicable.

Company Name _____

Signature:_____ Date:

Title:_____

STATE OF FLORIDA

COUNTY OF _____

Sworn to and subscribed before me by means of physical presence or online notarization, this _____ day of_ , _____ , by (name of person making statement).

[Notary Seal]

Notary Public

_____

Name typed, printed or stamped

_____

My Commission Expires:

_____

Personally Known OR _____ Produced Identification

Type of Identification Produced_____

Date

_____

EIN of Prospective Contractor – print/type

_____

***Use City Form once Project Awarded-ONLY**

PERFORMANCE & PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS: That _____ as Principal, hereinafter called Contractor, and _____ as Surety, hereinafter called Surety, are held and firmly bound unto the City of Titusville, hereinafter called Owner, in the amount of _____ (Dollars) ($_____) for the payment whereof the Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, Contractor has by written agreement dated this _____ day of _____ , _____, entered into a contract with the Owner for:

_____

_____ a copy of which said Contract is incorporated herein by reference and is made part hereof as if fully copied here.

NOW THEREFORE, THE CONDITION OF THIS OBLIGATION is such that, if Contractor shall promptly and faithfully perform said Contract, then this obligation shall be null and void; otherwise it shall remain in full force and effect.

The Contractor shall indemnify the Owner against and from all costs, expenses, damages, injury or conduct, want of care of skill, negligence or default, including patent infringement on the part of said Principal, agents or employees in the execution or performance of said Contract, in the time and manner prescribed in the Contract. If such Contractor(s) shall promptly make payments to all persons supplying him, them, or it, labor, material and supplies used directly or indirectly by said Contractor(s), Subcontractor(s) in the performance of the work provided for in said Contract as prescribed by Florida Statutes Sections 224.05 or 713.01/713.23, whichever is applicable to this contract, then this obligation shall be null and void; otherwise it shall remain in full force and effect and the Principal and the Surety jointly and severally agree to pay the Owner any difference between the amount to which the said Principal would be entitled on the completion of the Contract, and that amount which the Owner may be obligated to pay for the completion of the Contract, and that amount which the Owner may be obligated to pay for the completion of said work by Contract or otherwise, and any damages, direct or indirect or consequential, which the Owner may sustain due to such work, or due to the failure of the Contractor to properly execute and keep all the provisions of the Contract.

Contractor agrees to indemnify Owner and Owner's representatives, agents, and employees from and against all claims, damages, losses and expenses, including reasonable attorney's fees,

because of any injury or damage sustained by any person or property because of the said Contractor's operations relating to this Contract; or because of or in consequence of any neglect causing bodily injury, illness, or death, or property damage; or through the use of unacceptable materials in constructing the work; or because of any act or omission by said Contractor or that of a Subcontractor, or anyone employed by them; or because of any claims or amounts or for whose acts Contractor or a Subcontractor may be liable; recovered from any infringement or patent, trademark or copyright; or from any claims or amounts arising or recovered under Workers Compensation Law or any other laws. Should the Contractor not have adequate insurance coverage and the Purchasing & Contracting Administrator deem it necessary, the amount in questions may be retained from the amount due the Contractor under his Contract, or in case no money is due, his surety may be held until such suits, actions, injuries, or claims for damages shall have been settled and evidence to that effect furnished to the Purchasing & Contracting Administrator.

The condition of this obligation is such that said Principal & Surety further bind themselves, their heirs, successors, executors, administrators or assigns, jointly and severally, that if they fail to pay for any materials, provisions, or other supplies, for or about the performance of the work contracted to be done- or for any work or labor of any kind, or for amounts due, the surety on this bond will pay for the same, in an amount not exceeding the sum specified in this bond, and in case suit is brought upon this bond will also pay a reasonable attorney's fee, or agrees to pay the Owner any sum which the Owner may be compelled to pay because of any lien for labor or material furnished for the work specified by said Contract.

And the said Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract or to the work to be performed thereunder or the specifications accompanying the same shall in any way affect its obligations on this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contract or to the work or to the specifications.

SIGNED AND SEALED THIS _____ day of _____, _____.

WITNESS:

Name

Address

PRINCIPAL:

Name of Firm

Signature of Authorized Officer

Title

Business Address

City/State/Zip

WITNESS:	SURETY:
Name	Name of Firm
Address	Signature of Authorized Officer
	Title
	Business Address
	City/State/Zip
	Name of Local Agent
	Contractor's Director of Finance

APPROVED AS TO FORM:	ADMINISTRATIVE REVIEW:
_____	_____
City Attorney	Purchasing & Contracting Admin.

24B042LR FLEET SERVICES STATION FUEL TANK REPLACEMENT

NOTE: If you do not intend to bid on this requirement, please return this form to:

City of Titusville Purchasing and Contracts
555 S Washington Ave
Titusville, FL 32781

We the undersigned have declined to bid on your Bid No. _____ for the following reason(s):

_____ Specifications too "restrictive," i.e., geared toward one brand or manufacturer only (please specify below)
_____ Insufficient time to respond to the Invitation to Bid

_____ We do not offer this commodity/service or equivalent

_____ Our product schedule would not permit us to perform

_____ Specifications unclear (please specify below)

_____ Unable to meet bond or insurance requirements

_____ Remove our company from Vendor database for this commodity/service

_____ Other (please specify below)

Remarks:_____

_____

_____

_____

PLEASE PRINT COMPANY NAME:
COMPANY ADDRESS:
TELEPHONE NUMBER:
PRINTED SIGNATURE:
AUTHORIZED SIGNATURE:

***Use City Form once Project Completed-ONLY**

RELEASE OF LIEN

STATE OF FLORIDA)
COUNTY OF BREVARD)

CONTRACTOR'S FINAL AFFIDAVIT AND RELEASE OF LIEN

Before me, the undersigned authority, personally appeared _____

who, first being duly sworn, upon his oath deposes and says that:

1) He is _____
(Title of Officer)

of _____
(Name of Company)

doing business in the State of Florida, hereinafter called Contractor.

2) Contractor pursuant to a Contract dated _____, hereinafter referred to as Contractor, with City of Titusville, Florida, hereinafter referred to as Owner, has heretofore furnished or caused to be furnished labor, material and services for the construction of certain improvements as more particularly set forth in said Contract.

3) Contractor represents that all work to be performed under the aforesaid Contract has been fully completed and that all persons and firms who furnished material, labor and/or services incident to the completion of said work have been paid in full except to the following:

NAME	ADDRESS	AMOUNT DUE

(Write in "None" if all persons and firms have been paid in full)

4) The undersigned affiant for and in consideration of final payment to him in the amount of $_____, and all other previous payments paid by Owner to Contractor, does hereby for and in behalf of the Contractor, waive, release, remise and relinquish the Contractor's right to claim, demand or impose a lien or liens for work done or materials and/or services furnished or any other class of lien whatsoever, on any of the premises owned by Owner on which improvements have been completed in connection with the aforementioned Contract.

5) The affiant herein does hereby represent that he has authority to execute a full and final Release of Lien for and in behalf of the contractor as set forth above.

6) The affiant herein makes this Affidavit and Release of Lien for the express purpose of inducing Owner to make final disbursement and payment to the Contractor in the amount of $_____.

7) This Affidavit and Release of Lien is made by affiant with full knowledge of the applicable laws of the State of Florida. In addition to such rights as maybe afforded to Owner under said applicable laws, affiant expressly agrees to indemnify and save Owner harmless from any and all actual costs and expenses, including reasonable attorney's fees, arising out of claims by laborers,

subcontractors or materialmen who might claim that they have not been paid for services or material furnished by or through the Contractor in connection with the work performed under the aforementioned contract.

Name of Corporation_____

By: _____
President

(Corporate Seal)

Attest:

Name of Corporation _____

Sworn to and subscribed before me this _____ day of _____, _____.

Notary Public
State of Florida at Large

My Commission Expires: _____

City of Titusville

Safety Requirements for Contractors

Purpose

The Safety Requirements for Contractors and Subcontractors is intended to assure the safety of City of Titusville employees and the public who may be in proximity to renovation, demolition, installation, or maintenance operations conducted by Contractors or Subcontractors. Every Contractor is expected to take steps as necessary to protect the safety and health of City employees, visitors and the public during the performance of their work. Each Contractor that coordinates the work of Subcontractors shall assure that they abide by the requirements outlined herein.

Application

Each department that coordinates or uses the services of a Contractor to perform maintenance, repair, installation, renovation or construction-related operations is expected to designate one or more persons to coordinate this program within his or her department. These Project Managers or Project Coordinators will assure that the Contractor is:

- Informed of the presence of hazards in or near the work area.
- Informed about requirements related to asbestos, lead, confined space entry, lockout/tagout, hot work, maintenance of traffic and excavation operations.
- Aware of the City's expectations regarding safety compliance and the control of worksite hazards.

Scope

This program applies to all City of Titusville projects, and to all work performed by Contractors or Subcontractors on City of Titusville properties

General Requirements

A copy of this document shall be made available upon request to prospective bidders/offerors at the pre-bid/pre-proposal conferences for the work. This document shall be either included with, or referenced in, the contract documents.
Submittals, where required from the Contractor by this document, shall be made in writing directly to the Purchasing and Contracting Division and copied to the Project Manager/Coordinator. Submittals shall be made sufficiently in advance to avoid delay of the project.

Where review, approval, or coordination of submittals is required, submittals shall be made at least ten (10) working days prior to the start of the project unless prior arrangements have been made. Post-job submittals, where required as outlined in this document, shall be made no later than fifteen (15) working days after completion of the project or as specified herein.

The Contractor shall provide the Project Manager/Coordinator with emergency contact phone number(s), usable 24 hours a day, for the Contractor's representative.

The Contractor bears sole responsibility for the safety of his or her employees. The Contractor is expected to take all steps necessary to establish, administer, and enforce safety rules that will meet

the current requirements of the Occupational Safety and Health Administration (OSHA) and any other state or local standards, regulations or codes. These regulations include, but are not limited to:

- Title 29 of the Code of Federal Regulations (CFR) Parts 1910, Occupational Safety and Health Administration (OSHA) Standards for General Industry,
- Title 29 of the Code of Federal Regulations (CFR) Parts 1926, Occupational Safety and Health Administration (OSHA) Standards for the Construction Industry.

The Contractor bears sole responsibility for communication of safety-related information and requirements to his or her Subcontractors. The Contractor shall assure that his or her Subcontractors comply with the requirements outlined herein.

Control of Fugitive Emissions

The Contractor shall take all necessary precautions to control or contain fugitive emissions from the job site. Fugitive emissions include, but are not limited to:

- Nuisance dust,
- Chemical odors/vapors,
- Hazardous materials (such as lead dust or asbestos), and
- Noise.

Where the product(s) or material(s) to be used by the Contractor has a permissible exposure limit (PEL) established by OSHA, the contractor shall submit a written plan to the Project Manager/Coordinator prior to the work. This plan shall detail the methods that will be employed by the Contractor to limit, control or eliminate exposure of City employees or the public to these hazards. Where engineering controls will not control fugitive emissions of these chemicals or materials or are not feasible, the contractor shall monitor, or shall contract to have monitored, work area exposure conditions. Monitoring shall occur, at a minimum, during the start of work and whenever there is a change in procedure, process, or chemical or material used. A copy of the monitoring results shall be submitted to the Project Manager/Coordinator within 24-hours of receipt by the Contractor.

Accidental Spills and Releases

In the event of an accidental release or spill of chemicals or other hazardous materials the Contractor shall:

- Immediately take action as appropriate to contain the spill if this action can be taken without jeopardizing the health or safety of employees,
- Notify the fire department, or other entities as needed or required,
- Contact Human Resources Risk Manager at 321-567-3730, and
- Contact the Project Manager/Coordinator.

All costs associated with responding to or remediation of a chemical or hazardous material spill or release is the responsibility of the Contractor.

Other Potential Safety Hazards

The Contractor shall abide by the requirements of any sign posted in a building that requires the use of specific personal protective equipment, that restricts access to qualified or authorized persons only, or that establishes requirements for entry.

The Contractor shall abide by all safety rules and procedures, including training, as noted on the plans and specifications relating to work in areas that may be contaminated with arsenic.

Specific Program Requirements

Asbestos and Suspect Asbestos Containing Materials

It will be the responsibility of the Contractor to provide his or her own asbestos awareness program which shall include, but is not limited to, the information contained in this section and the OSHA asbestos-related regulations (29 CFR 1926.1101). Verification that this training has been conducted shall be supplied to the City upon request.

Contractors employed by the City to perform building or facilities-related maintenance, repair or renovation shall be informed by the Project Manager/ Coordinator of the location of suspect and known asbestos-containing materials (ACM) in the work area(s) to which they are assigned by one of the following means:

- The Project Manager/Coordinator shall provide the Contractor with a copy of an asbestos inspection report specific to their work and the materials that are to be disturbed, or
- Where the construction documents for a project clearly detail asbestos locations within the work area, these documents may serve in lieu of the inspection report.

An asbestos inspection report may, at the discretion of the Purchasing and Contracting Division, be prepared by an asbestos contractor licensed in Florida to perform the duties of Asbestos Inspector and Asbestos Management Planner.
Contractors shall, under no circumstances, damage or disturb suspect or known ACM unless they are a licensed Asbestos Abatement Contractor and have been specifically employed to perform asbestos repair or removal. If suspect asbestos materials are discovered during the course of the work, the Contractor shall stop work immediately and notify the Project Manager/Coordinator.
The Contractor shall not proceed with any change in work which requires a material to be disturbed that the asbestos inspection report, or construction documents show has not previously been tested (e.g. "suspect" ACM). If a change in the scope of work becomes necessary, the revised scope of work shall be reviewed and pre-approved by an authorized person.
Asbestos materials may not be used or installed in any City facilities.

Lead-containing Materials

Contractors employed by the City to perform building or facilities-related maintenance, repair or renovation shall be informed by the Project Manager/Coordinator of the location of lead-containing building materials in the work area(s) to which they are assigned by one of the following means:

- The Project Manager/Coordinator shall provide the Contractor with a copy of a lead inspection report specific to their work and the materials that are to be disturbed, or
- Where the construction documents for a project clearly detail the location of lead-containing materials within the work area, these documents may serve in lieu of the inspection report.

A lead inspection report may, at the discretion of the Purchasing and Contracting Division, be prepared by a lead contractor licensed in Florida to perform the duties of Lead Inspector.

Contractors that will disturb lead-containing building materials during the course of the work shall take all necessary precautions to protect City employees, and the public from exposure to lead dust or contamination. These measures shall conform, at a minimum, to the OSHA requirements detailed

in 29 CFR 1926.62 and applicable local, state and federal regulations. The Contractor shall submit a copy of his or her lead compliance program, as required by 29 CFR 1926.62(e), with required supporting documentation for prior review and approval. This submittal shall be made sufficiently in advance of construction to avoid delay of the project.
A copy of the analytical report(s) for any personal air samples taken during the course of the work shall be provided to the City.
The Contractor shall not proceed with any change in work that requires a material be disturbed that the lead inspection report, or construction documents shows has not previously been tested unless pre-approved work procedures will be followed.
Where lead-containing materials will be disturbed or removed during the course of work, the Project Manager/Coordinator shall determine disposal requirements. If the lead-containing materials will constitute a hazardous waste, disposal of these materials shall be in accordance with applicable local, state and federal requirements. The disposal requirements must be established during the design of the project.

Confined Spaces

When the Contractor must perform work that involves entry into a permit-required confined space, the Project Manager/Coordinator shall:

- Inform the Contractor that the workplace contains permit spaces and that permit space entry is allowed only through compliance with a permit space program meeting the requirements set forth by OSHA (1910.146).

- Apprise the Contractor of the elements, including the hazard(s) identified and the City's experience with the space that make it a permit-required confined space.

- Apprise the Contractor of any precautions or procedures that the City has implemented for the protection of City employees in or near permit spaces where contractor personnel will be working.

- Coordinate entry operations with the Contractor when both City personnel and contractor personnel will be working in or near permit spaces.

- Debrief the Contractor at the conclusion of the entry operations regarding the permit space program followed and any hazards confronted or created in permit spaces during entry operations.

- Provide a copy of the City of Titusville's Confined Space Entry Program to the Contractor upon request.

Information on City's Confined Space Entry Program and information on specific confined spaces on City of Titusville properties may be obtained by contacting the Water Resources Safety Coordinator at 321-567-3855.

Each Contractor who is retained to perform work that will require permit space entry operations shall:
- Coordinate entry operations with the Project Manager/Coordinator when both the Contractor and City personnel will be working in or near permit spaces,
- Inform the Project Manager/Coordinator in writing of the permit space program the Contractor will follow, including written certifications for Entry Supervisors, Attendants or Entrants.

- Inform the Project Manager/Coordinator of any hazards confronted or created in permit spaces during entry operations.
- Provide a copy of the Contractor's Confined Space Program to the City upon request.
- Inform the Project Manager/Coordinator in writing of the rescue services/team they will be using during permit entry.
- Provide a copy of the canceled permit(s) to the Project Manager/Coordinator and Water Resources Safety Coordinator at the conclusion of entry operations.

Hazard Communication

Chemicals are used at City of Titusville facilities. Chemical use is routine in, but is not limited to, the following areas or locations:

- Laboratories.
- Fume hood exhausts on the roofs of laboratory buildings. (In general, signs have been posted on the roof access hatch or door restricting access to the roofs of buildings where fume hood exhausts are located).
- Chemical stock rooms.
- Chemical waste accumulation areas.
- Water Production and Reclamation Facilities
- Paint and chemical storage areas.
- Maintenance Facilities.

The Project Manager/Coordinator shall inform the Contractor of the following:

- Known hazards and any required safety procedures that must be followed in the Contractor's work area.
- Method for obtaining access to Material Safety Data Sheets (MSDS) for hazardous chemicals present in the Contractor's work area.
- Information about the labeling system used in the work area.
- Emergency procedures that the Contractor is to follow in the event of accidental exposures or releases of hazardous chemicals.

MSDS are required to be maintained and to be accessible to employees in each work area, and MSDS for all chemicals may be obtained from the Human Resources Risk Manager.

The Contractor shall maintain, on-site, MSDS for all hazardous chemicals used or stored at that job site. Copies of MSDS shall be provided to the Project Manager/Coordinator by the Contractor prior to start of work.

The Contractor shall take precautions to ensure hazardous chemicals or materials are handled and disposed of in accordance with federal and state regulations. Where a hazardous waste disposal manifest is required by these regulations, the Contractor shall Project Manager/Coordinator to assure that manifesting; storage, and the proposed disposal method and disposal site meet requirements. The Contractor shall supply a copy of the completed waste manifest to the Project Manager/Coordinator within 24-hours of receipt.

Where the Contractor has secured air samples documenting employee exposure to airborne chemical or particulate hazards during the course of their work, a copy of all air samples results shall be provided to the Project Manager/Coordinator within 24-hours of receipt by the Contractor.

Electrical Safety and Lockout/Tagout

The Project Manager/Coordinator shall inform the Contractor of City of Titusville lockout/ tagout procedures.

The Contractor shall ensure that his/her personnel understand the City's energy control procedures and comply with the requirements of the City's lockout/tagout program.

A copy of the City's Electrical Safety and Energy Control Policy programs shall be provided to the Contractor upon request. If the Contractor will be using their own lockout/tagout procedure, the Project Manager/Coordinator shall ensure that City personnel in the work area understand the Contractor's control procedures and that they comply with the requirements of the Contractors' program. A copy of the Contractor's electrical safety and lockout/tagout programs shall be made and provided to the City before commencement of work.

Trenching and Excavations

The Contractor shall coordinate trenching and excavation work with the Project Manager/Coordinator, and Sunshine One Call (by dialing 811) to assure the coordination of work and shutdown of utilities if necessary.

The design of sloping and benching systems, support systems, shield systems or other protective systems shall conform, at a minimum, to the OSHA requirements detailed in 29 CFR 1926 Subpart P.

Trenching or excavations below the level of the base or footing of any foundation or retaining wall, or adjacent to any utility, sidewalk or roadway, will not be permitted unless:

- A support system, such as underpinning, is provided to ensure the safety of employees and the stability of the structure, or
- The excavation is in stable rock, or
- A registered professional engineer has approved the determination that the structure is sufficiently removed from the excavation so as to be unaffected by the excavation activity, or
- A registered professional engineer has approved the determination that such excavation work will not pose a hazard to employees or the structure.

This determination is the responsibility of the Contractor except as permitted, required or otherwise allowed by the project specifications or drawings.
The Contractor shall notify the Project Manager/Coordinator of the name of the individual that is to serve as the Contractor's competent person as defined by this program and the OSHA regulations. The Contractor's designated competent person shall maintain a written log of the daily inspections made of excavations, adjacent areas, and protective systems. A copy of this written log shall be made available to the City upon request. Where the design of a sloping and benching system, support system, shield systems or other protective systems requires review and approval by a registered professional engineer, the Contractor shall submit a copy of the completed review to the Project Manager/Coordinator prior to start of work.

Fall Protection

Fall protection may be needed in work involving ramps, runways, and other walkways; excavations; hoists; holes; form work and reinforcing steel; leading edges; unprotected sides and edges; overhand bricklaying and related activities; roofing; pre-cast concrete erection; wall openings; scaffolds; ladders; and other walking/working surfaces, in accordance with 29 CFR 1926 Subpart M. Protect employees working 6 feet (1.8 meters) or more above a lower level and those who may fall into dangerous equipment. Typical fall protection systems include controlled access zones, guardrails, fences, covers, safety nets, and personal fall arrests.

For work conducted for the City of Titusville in which fall hazards are present, use employees trained on how to recognize and minimize fall hazards and how to properly use fall protection systems and equipment. MAKE DOCUMENTATION OF TRAINING AVAILABLE to the City upon request.

Hoists and Cranes

Designate a competent person who will inspect all machinery and equipment prior to each use, and during use, to make sure it is in safe operating condition. Repair deficiencies and replace defective parts before continued use. Install barricades to prevent injury to employees or passers-by (Reference 29 CFR 1926, Subpart N).

Do not exceed safe working loads. Take precautions to prevent physical contact with power lines either by maintaining adequate distance, use of insulating barriers, or de-energizing of power lines, as appropriate.

Properly anchor equipment and do not use roofs or walls for a supporting brace.

Hot Work

Contractors performing hot work shall maintain a Hot Work Permit Program complying with the OSHA requirements found in 29 CFR 1926.352, ANSI Z49.1-88 and NFPA 51B. Examples of hot work include, but are not limited to, use of open flames, compressed gases or supplied fuel burning, brazing, cutting, grinding, soldering, thawing pipe, torch applied roofing, and welding. A copy of the canceled permit(s) shall be provided to the Project Manager/Coordinator after completion of the work.

Work Area Traffic Control

An approved traffic control plan is required in accordance with the Florida Department of Transportation and the Manual of Uniform Traffic Control Devices, Part VI, and Plans and Specifications. Use and submittal of the FDOT Index 600 series is acceptable by the City.

Personal Protective Equipment

Personal protective equipment such as hard hats, eye protection, foot protection, hearing protection, respirators, etc., shall be worn as required, in accordance with OSHA regulations.

Work Site Inspections

Unannounced work site inspections may be conducted by City Safety Representatives or designated departmental personnel. These inspections are conducted solely for the benefit of the City, and shall not relieve the contractor of responsibility for enforcement of, and compliance with OSHA and other state and local regulations.

In the event that work site conditions exist that potentially impact the safety of City employees or the public, the inspector shall issue a verbal or written warning to the Contractor and shall notify the Project Manager/Coordinator. If the unsafe conditions cannot be immediately corrected and represent a danger or have the potential to harm employees, or the public, then the inspector will:

- Detail the OSHA violations that were noted, and explain the potential impact upon employees, or the public,
- Require that the Project Manager/Coordinator have the Contractor stop work until the unsafe conditions can be mitigated,
- Issue a formal written report of the violations to the Contractor. This report shall be copied to the Project Manager/Coordinator.

Reports of deficiencies may be factored into the evaluation of the contract by the City, and may be included in a vendor complaint file that is available for review by other state agencies.

Repeat safety violations and/or a single serious, willful safety violation by a Contractor may warrant review and termination of the contract.

"Serious, willful safety violation" is defined, for the purposes of this program, as a work activity with a substantial probability that death or serious physical harm could result, and where the potential hazard was known or should have been known, but where the work activity was continued, regardless of the existence of the potential safety hazard.

Definitions

Competent Person: As related to excavation, trenching or shoring work, the Contractor's "competent person" means one who is capable of identifying existing and predictable hazards in the surroundings, or working conditions which are unsanitary, hazardous or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.

Confined Space: A confined space is a space that is large enough for a person to enter, that has limited means for entry or exit, and that is not designed for continuous occupancy. Examples include tanks, silos, storage bins or hoppers, utility vaults, and pits.

Purchasing and Contracting Division: The Division of the Support Service's Department at the City that has contracted for work to be performed by a Contractor.

Contractor: An entity or agency employed by the City to perform the installation or maintenance of equipment, or the renovation or construction of a building, room or facility on City property.

Lockout/Tagout: A program used to ensure that employees are protected from sources of potentially hazardous energy. The program requires that hazardous energy sources be identified and locked and/or tagged-out before work is done on the system(s).

Maintenance of Traffic: Maintenance of Traffic is a reference to the Florida Department of Transportation requirement for an approved traffic control plan and FDOT certification of contractor personnel responsible for supervision, placement, maintenance or inspection of work

zone traffic control, in accordance with the FDOT Roadway and Traffic Design Standards, Index 600 and Part VI of the Manual of Uniform Traffic Control Devices, and Plans and Specifications.

Permit-required confined space: A permit-required confined space is a confined space that contains potential or known safety hazards that must be dealt with prior to or during entry to assure the safety of those employees performing the work.

Project Manager/Coordinator: The individual(s) within a Department that has been assigned duties related to oversight or coordination of work performed by a Contractor as defined in this program.

Appendix A

The following checklist is provided to assist the Project Manager/Coordinator with complying with the requirements outlined in this program.

Name of Project Manager/Coordinator:	
Work Site(s) and Location(s):	
Applicable Date(s):	
Contractor Name:	
Contractors Representative:	
24-hour phone number:	

Action Required	
Traffic Control Plan Required? If yes, is the Contractor certified by the FDOT for Maintenance of Traffic?	☐ Yes ☐ No
Asbestos review required? If yes, provide inspection report to Contractor or assure that the Construction Documents detail the location(s) of asbestos within the work area.	☐ Yes ☐ No
Lead materials review required? If yes, provide inspection report to Contractor or assure that the Construction Documents detail the location of lead-containing materials within the work area.	☐ Yes ☐ No
Will the work require entry into a permit-required confined space?	☐ Yes ☐ No
• If yes, inform the Contractor about known hazards and history of entry operations for each space that they will enter. Contact Water Resources Safety Coordinator at 321-567-3855 for assistance as needed. • If yes, the Project Manager/Coordinator will debrief the Contractor after the work in these spaces is completed.	
• Will both the Contractor and City personnel be working in or near the permit-required confined space(s)?	☐ Yes ☐ No
• If yes, determine if the Project Manager/Coordinator or the Contractor will coordinate entry operations to assure that everyone is aware of any work that is taking place that could affect personnel in the confined space. • If yes, provide a copy of the City's Confined Space Program to the Contractor and require that he or she conform to the requirements of that program. • If yes, at the end of entry operations, obtain a copy of all canceled permits, and send a copy of this information to the Water Resources Safety Coordinator.	

Hazard Communication: Provide the following to the Contractor: • Information on precautions and safety procedures that must be followed in the work area. • Access to MSDS for hazardous chemicals located in the work area. • Information regarding the labeling system used in the work area. • Emergency procedures to be followed in the event of accidental exposure or release of hazardous chemicals or materials. Obtain a list of, and MSDS for, all chemicals that the Contractor will be using. Provide a copy to Project Manager/Coordinator for review and approval. The Contractor understands that MSDS must be kept on-site for all chemicals used by the Contractor on City property, and that no other chemicals may be brought on-site without prior approval by the Project Manager/Coordinator.	☐ Yes ☐ No
Will Personal Protective Equipment be required on the project site? • If respiratory protection or hearing protection is required, obtain copies of the contractor's Respiratory Protection and Hearing Conservation Programs	☐ Yes ☐ No
Will work by the Contractor involve electrical or mechanical systems? • If yes, inform the Contractor of the lockout/tagout procedures followed by City personnel. Make sure that all City employees in the work area are aware of the Contractors lockout/tagout procedures.	☐ Yes ☐ No
Will Hot Work Permits be required during the Contractors work? If yes, coordinate Hot Work permits with designated personnel.	☐ Yes ☐ No
The Contractor understands that any hazardous waste generated during the work must be disposed of in a manner consistent with all applicable state and federal regulations, and that prior approval is required for the disposal method and disposal site?	☐ Yes ☐ No
The Contractor representative understands that it is his/her responsibility to relay the above information to other contract employees and his or her subcontractors.	☐ Yes ☐ No
The Contractor has been given the opportunity to ask questions and have those questions answered to his/her satisfaction.	☐ Yes ☐ No

	December 9, 2025 **REPLACEMENT OF SEMINOLE LIFT STATION AND DEMOLITION OF BAYVIEW LIFT STATION 26-B-004LR** **ADDENDUM #2**	*City of Titusville* *Purchasing & Contracting Division* *PO Box 2806 (555 South Washington Avenue)* *Titusville, FL 32781-2806 (32796-3584)*

TO ALL PROSPECTIVE BIDDERS:

This is an Addendum to and should be considered as part of the original bid package for the above-mentioned bid. Please acknowledge receipt of Addendum 2 in the space provided on the Bidder Checklist. Should you have any questions pertaining to this Addendum, please contact Leslie Rothering at 321-567-3973, email Leslie.Rothering@titusville.com.

Clarification to questions:

1) What is the required wall thickness of the precast wet well?
   Response: This would be provided by the delegate engineer of the precast.

2) What is the required base thickness of the precast wet well?
   Response: This would be provided by the delegate engineer of the precast.

3) At the Seminole Site, are there any valves upstream or downstream of the proposed force main tie-in? Are line stops acceptable to isolate the lines?
4)
   Response: Sheet C-8A shows existing valves with proximity to the force main tie-in. There is also an in-line valve at APPROX. STATION 9+93, 14.13'R (see Survey Sheet 2 of 3). The condition of these valves are unknown. Line stops are acceptable for isolation purposes for a short duration. Due to the high flow in the force main, they cannot be used for long periods of time.

5) What are the flow rates in the existing stations?
   Response: The pumps for the existing stations are rated at 700 gpm each.

6) Can the city supply the current flow rates for each lift station incase these are by-passed individually at some point during the project.
   Response: See response to Item 4.

ADDITIONAL DESIGN CRITERIA have been added under this Addendum #2 to precast utility structures under Specification Section 330516.13. The updated specification section has been attached to this addendum.

Responses to additional questions received will be issued in forthcoming Addendum #3.

The ITB opening due date and times has been EXTENDED to January 7, 2026 @ 3:00 p.m.

Sincerely,

Leslie Rothering
Purchasing and Contracts

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SECTION 330516.13 - PRECAST CONCRETE UTILITY STRUCTURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

B. All work shall comply and be installed per latest City of Titusville Water Resources Department Technical Specifications (May 2022 or later), including Section 3.0 General Design and Construction Standards, Section 6.0 Lift Station Design and Construction Standards, and Appendix A Approved Vendor List.

1.2 SUMMARY

A. Section Includes:

1. Modular precast concrete wet well structure.

1.3 ACTION SUBMITTALS

A. Shop Drawings:

1. Base sections, riser sections, eccentric and concentric conical top sections, flat slab tops, grade rings with notarized certificate indicating compliance with ASTM C478 and City of Titusville standards.
2. Cut sheets indicating location, orientation size and elevation of finished inverts for all penetrations for each structure.
3. Calculations.

B. All shop drawings and calculations for precast utility structures shall be signed and sealed by a Professional Engineer registered in the state of Florida.

1.4 INFORMATIONAL SUBMITTALS

A. Manufacturer's Certificate: Products meet or exceed specified requirements.

B. Manufacturer Instructions: Detailed instructions on installation requirements, including storage and handling procedures.

C. Field Quality-Control Submittals: Results of Contractor-furnished tests and inspections.

D. Qualifications Statements: Qualifications for manufacturer.

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1.5 QUALITY ASSURANCE

A. Obtain all modular precast concrete utility structure pieces from a single source.

B. Perform Work according to NPCA Quality Control Manual for Precast and Prestressed Concrete Plants.

C. At least three cylinders will be taken each day that utility structure sections are cast, with batch samples to be designated by laboratory representative. At least one set of cylinders will be taken from each 8 cubic yards of concrete used in utility structure section construction. These samples will be tested for strength. If the samples fail to meet specified minimum concrete strength requirements, all sections manufactured from the concrete from which the cylinders were made will be rejected.

D. The OWNER reserves the right to core structures either at the job site or point of delivery to validate strength of concrete and placement of steel. If cores fail to demonstrate the required strength or indicate incorrect placement of reinforcing steel, all sections not previously tested will be considered rejected until sufficient additional cores are tested, at no increase in Contract Amount, to substantiate conformance to these requirements.

E. The quality of all materials, the process of manufacture, and the finished sections shall be subject to inspection and approval by the Engineer, or other representative of the Owner. Such inspection may be made at the place of manufacture, or on the work after delivery, or at both places and the materials shall be subject to rejection at any time on account of failure to meet any of the requirements specified herein; even though samples may have been accepted as satisfactory at the place of manufacture. Material rejected after delivery to the job shall be marked for identification and shall be removed from the job at once. All materials which have been damaged after delivery will be rejected, and if already installed, shall be acceptably repaired, if permitted, or removed and replaced, entirely at the Contractor's expense.

F. Perform Work according to City of Titusville standards.

1.6 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing products specified in this Section with minimum three years' experience.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Inspection: Accept precast structures on Site in manufacturer's original packaging and inspect for damage.

B. Comply with precast concrete manufacturer instructions for unloading, storing, and handling precast structures.

C. Lift structures from designated lifting points.

D. Storage:

1. Store precast concrete structures to prevent damage to Owner's property or other public or private property.
2. Repair property damaged from materials storage.

PART 2 - PRODUCTS

2.1 PRECAST CONCRETE UTILITY STRUCTURES

A. Wet well: Provide precast concrete structure per City of Titusville standards.

1. Precast Concrete Structure's Elements: Design to support their own weight, the weight of soil above at 120 pcf and capable of withstanding a live load equal to 300psf applied to the top slab.

2. Exterior Walls: Design for an equivalent fluid pressure of 98 lbs. /sq. ft . The top of the pressure diagram shall be assumed to originate at finished ground level. Consider additional lateral pressure from approaching truck wheels in accordance with AASHTO.

3. Allowable net bearing: 1000 psf.

4. Structural Design: Take into account discontinuities in the structure produced by openings and joints in the structure.

5. Structures: Design to prevent flotation (counteract uplift from buoyant force) without the benefit of skin friction when the ground water level is at finished ground surface.

a. Flotation Forces: Resisted by the dead load of the structure. Weight of equipment and piping within the structure and soil frictional forces shall not be considered as being effective in resisting flotation forces.

2.2 ACCESS HATCHES

A. Access Hatch: As specified in Section 083483 “Floor Doors”.

2.3 FINISHES

A. Interior Coating: All interior services shall be coated with one of the following liners.

1. GSE StudLiner by Gundle/SLT Environmental, Inc.
2. Agru Sure Grip Concrete Protective Liner by Agru America, Inc.
3. City approved equal.

B. Exterior Coating: Exterior of utility structure shall be coated with two coats of one of the following sealants. Each coat shall have dry film thickness of 3.8 millimeters.

1. EpoxyConSeal CS-55 by Concrete Sealants, Inc.
2. City approved equal.

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PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that items provided by other Sections of Work are properly sized and located.

B. Verify that built-in items are in proper location and ready for roughing into Work.

C. Verify correct size of structure excavation.

D. Verify that subgrade and bedding are properly prepared, compacted, and ready to receive Work of this Section.

3.2 PREPARATION

A. Mark each precast structure by indentation or using waterproof paint showing date of manufacture, manufacturer, and identifying symbols and numbers shown on Drawings to indicate its intended use.

B. Coordinate placement of inlet and outlet pipe or duct sleeves required by other Sections.

C. Do not install structures if Site conditions induce loads exceeding weight capacity of structures.

D. Inspect precast concrete structures immediately prior to placement in excavation to verify that they are internally clean and free from damage; remove and replace damaged units.

3.3 INSTALLATION

A. Install Excavation and Backfill:

1. Excavate structures in location and to indicated depth.
2. Provide clearance around sidewalls of structure for construction operations.
3. When groundwater is encountered, prevent accumulation of water in excavations; place structures in dry trench.
4. Where possibility exists of watertight structure becoming buoyant in flooded excavation, anchor structure to avoid flotation as approved by Engineer.

B. Place structure sections plumb and level, trim to correct elevations, and anchor to base section.

C. Backfill excavations for structures as specified in Section 312000 “Earthwork.”

D. Set frames and hatches level without tipping and to correct elevations.

E. Coordinate with other Sections of Work to provide correct size, shape, and location.

F. Precast Concrete Structures:

1. Lift precast components at lifting points designated by manufacturer.
2. When lowering structures into excavations and joining pipe to units, take precautions to ensure that interior of pipeline and structure remains clean.
3. Set precast structures bearing firmly and fully on crushed stone bedding, compacted as specified in Section 312000 “Earthwork” or on other support system as indicated on Drawings.
4. Assemble multi-section structures by lowering each section into excavation; set level and firmly position base section before placing additional sections.
5. Remove foreign materials from joint surfaces and verify sealing materials are placed properly.
6. Maintain alignment between sections by using guide devices affixed to lower section.
7. Joint sealing materials may be installed on Site or at manufacturer's plant.
8. Verify that installed structures meet required alignment and grade.
9. Remove knockouts or cut structure to receive piping without creating openings larger than required to receive pipe; fill annular spaces with mortar.

3.4 FIELD QUALITY CONTROL

A. Test concrete structure sections according to ASTM C497.

B. Leakage Tests:

1. Performed on every structure with Engineer observing.
2. Preparation:

    a. Prior to placing the shelf and invert, and pointing the horizontal joints, fill all lifting holes within 6 feet of ground surface with approved non-shrinking mortar.
    b. Lower groundwater table as required.
    c. Plug all pipes and other openings into structure.

3. Test:

    a. Fill water to top of cone section.
    b. Observe for visible water in the excavated area.
    c. If area around structure is backfilled or the test is unsatisfactory, repeat the test allowing for suitable time for absorption of water in excavated area.
    d. At the end of the absorption period, refill structure and wait 8 hours.
    e. Refill the cone at the end of 8 hours, measuring the amount required to refill.
    f. Extrapolate to determine 24-rate of leakage. Do not allow leakage to exceed 1 gallon per vertical foot in a 24-hour period.
    g. Engineer will perform visual inspection along with Contractor.

4. Repair:

    a. If leakage is less than 3 gallons per vertical foot per 24 hours, make approved repairs to the structure and retest, if it is determined the leakage is due to defects in the joints or sections.

b. If leakage is 3 gallons or more, then replace the entire structure, including all joints and sections at Contractor's expense. Retest the new structure as described above.

C. A vacuum test may be substituted for a leakage test as follows:

1. The filling and pointing of exterior joints are not required where the excavation has not been backfilled.
2. Inflate to affect a seal between the vacuum base and the top of the structure.
3. Connect the vacuum pump to the outlet port with the valve open and a vacuum of 10 inch Hg (20 inch of Hg absolute) drawn.
4. Close the valve.
5. If the pressure drop exceeds the acceptable limits, make necessary repairs as approved by the Engineer, and:

   a. Re-test the structure.
   b. If the structure fails to meet the minimum requirements of the vacuum test retest using the leakage test.

6. Upon completion of successful vacuum test, the interior and exterior joints shall be filled and pointed.

3.5 CLEANING

A. Clean all new structures to be free of silt, debris and foreign matter of any kind, prior to final inspection.

END OF SECTION 330516.13

	November 26, 2025 **REPLACEMENT OF SEMINOLE LIFT STATION AND DEMOLITION OF BAYVIEW LIFT STATION** **26-B-004LR** **ADDENDUM #1**	*City of Titusville* *Purchasing & Contracting Division* *PO Box 2806 (555 South Washington Avenue)* *Titusville, FL 32781-2806 (32796-3584)*

TO ALL PROSPECTIVE BIDDERS:

This is an Addendum to and should be considered as part of the original bid package for the above-mentioned bid. Please acknowledge receipt of Addendum 1 in the space provided on the Bidder Checklist. Should you have any questions pertaining to this Addendum, please contact Leslie Rothering at 321-567-3973, email Leslie.Rothering@titusville.com.

Clarification to questions:

1) Reference drawing C-14 (Note 2). Replacing the existing street pavement w/ concrete shall be submitted as a bid alternate. The schedule of bid form does not give an option for an alternate. Is a bid alternate required or is the intent to replace the existing pavement with asphalt only?
   Response: The City has decided to only move forward with the concrete/river rock option. The mix cut sheets are attached.

2) Is the intent to leave the existing Seminole lift station live during construction of the new Seminole lift station? Can the generator be installed after startup (at a later date), once the existing building has been removed? Or is the generator required for the initial startup?
   Response: Operations of the existing station must be maintained. As an example, but not means and methods, when the station was previously replaced flow was intercepted at the manhole before the station and bypassed. The generator may be installed at a later date. The generator is not required for start up, but would be required to complete the project.

3) Is a City building permit required?
   Response: No building permit required.

4) Is there an alternate bid?
   Response: There is no alternate bid anymore. The City will only proceed with concrete/river rock, not asphalt for the roadway.

5) What is the contract duration?
   Response: 14 months for construction.

6) What is the engineers estimate?
   Response: $5.15 million

7) Is there a geotechnical report available?
   Response: Yes (attached)

	November 26, 2025 **REPLACEMENT OF SEMINOLE LIFT STATION AND DEMOLITION OF BAYVIEW LIFT STATION 26-B-004LR** **ADDENDUM #1**	*City of Titusville* *Purchasing & Contracting Division* *PO Box 2806 (555 South Washington Avenue)* *Titusville, FL 32781-2806 (32796-3584)*

8) What type of road closures are allowed?
Response: The road may be closed but must all thru traffic for residents.

9) Who is responsible for the new concrete FPL poles?
Response: FPL

10) Please confirm that the road must be replaced with concrete/river rock option only.
Response: Yes the City has decided to only proceed with the road being concrete/river rock.

11) At the pre-bid the city mentioned a location for the concrete debris to be discarded. Can you supply an address or distance from the project that this location is?
Response: 1355 Buffalo Road- the City property next to the wastewater plant.

12) Is there a city owned facility anywhere near the project for materials or equipment to be staged and/or stored?
Response: No City owned facility. There is an empty lot next to BB Rad's that contractors would need to engage the owner. A recent project did that successfully.

13) Would the City please consider extending the bid date one week?
Response: The ITB opening due date has been EXTENDED to December 17, 2025 @ 3:00 p.m.

Additional clarifications to questions received will be issued in Addendum #2.

Sincerely,
Leslie Rothering
Purchasing and Contracts

Attachments: 012900 FL - Payment Procedures Seminole-Bayview
Titusville Exp. Agg River Rock Mix
Soil Report

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SECTION 012900 - PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements necessary to prepare and process Applications for Payment.

B. All Work under this Contract shall be complete, in-place, fully tested, ready for continuous uninterrupted service and Final Acceptance by the Owner. Required items of Work and incidentals necessary for the satisfactory completion of the Work which are not specifically listed in the Bid Schedule, and which are not specified in this Section to be measured or included in one of the items listed in the Bid Schedule, shall be considered as incidental to the Work.

C. Where quantities are shown they are approximate and are given only as a basis of calculation upon which the award of the Contract is to be made. The Owner or Engineer do not assume any responsibility that the final quantities, nor shall Contractor claim misunderstanding because of such estimate of quantities. Final payment will be made only for the satisfactorily completed quantity of each item.

D. Related Requirements:

1. Section 013200 "Construction Progress Documentation" for administrative requirements governing the preparation and submittal of the Contractor's Construction Schedule.

1.3 DEFINITIONS

A. Submitted Bid: The Bid submitted by the Contractor specific to this project and accepted by the Owner.

B. Schedule of Values: A statement furnished by Contractor allocating portions of the Contract Sum to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

1.4 SCHEDULE OF VALUES

A. Coordination: Coordinate preparation of the Schedule of Values with preparation of Contractor's Construction Schedule.

1. Coordinate line items in the Schedule of Values with items required to be indicated as separate activities in Contractor's construction schedule and separate line items included in the Submitted Bid.
2. Submit the Schedule of Values to Engineer at earliest possible date, but no later than ten days before the date scheduled for submittal of initial Applications for Payment.

B. Format and Content: Use Project Manual table of contents and Submitted Bid as a guide to establish line items for the Schedule of Values. Provide at least one line item for each Specification Section and Submitted Bid line items not included as a Specification Section.

1. Identification: Include the following Project identification on the Schedule of Values:

    a. Project name and location.
    b. Owner’s name.
    c. Owner’s Project number.
    d. Name of Engineer.
    e. Engineer's Project number.
    f. Contractor's name and address.
    g. Date of submittal.

2. Arrange the Schedule of Values in tabular form, with separate columns to indicate the following for each item listed:

    a. Related Specification Section or division.
    b. Description of the Work.
    c. Name of subcontractor.
    d. Name of manufacturer or fabricator.
    e. Name of supplier.
    f. Change Orders (numbers) that affect value.
    g. Dollar value of the following, as a percentage of the Contract Sum to nearest one-hundredth percent, adjusted to total 100 percent. Round dollar amounts to whole dollars, with total equal to Contract Sum.

        1) Labor.
        2) Materials.
        3) Equipment.

3. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Provide multiple line items for principal subcontract amounts in excess of five percent of the Contract Sum.
4. Provide a separate line item in the Schedule of Values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed. Contractor is responsible for obtaining approval from the Owner for any stored materials. Payment for stored materials will be at the discretion of the Owner.
5. Allowances: Provide a separate line item in the schedule of values for each allowance. Show line-item value of unit-cost allowances, as a product of the unit cost, multiplied by measured quantity. Use information indicated in the Contract Documents to determine quantities.

6. Overhead Costs, Proportional Distribution: Include total cost and proportionate share of general overhead and profit for each line item.
7. Temporary Facilities: Show cost of temporary facilities and other major cost items that are not direct cost of actual work-in-place as separate line items.
8. Schedule of Values Revisions: Revise the Schedule of Values when Change Orders or Construction Change Directives result in a change in the Contract Sum. Include at least one separate line item for each Change Order and Construction Change Directive.

1.5 MEASUREMENT

A. Horizontal measurement for payment shall be made using station to station distances along the ground surface and may not represent the actual length of pipes on slopes. Gravity sewers shall use the center of manholes or structures for the basis of measurement.

1.6 PAYMENT

A. All costs including all such items as freight, taxes, and overhead and profit, shall be included in the lump sum or unit prices bid for the various Bid Items unless specifically noted otherwise. All Contract prices included within the Bid Schedule will be full compensation for all labor, materials, tools, equipment, overhead and incidentals necessary to complete the Work as shown on the Contract Drawings and/or as specified in the Contract Documents unless specifically noted otherwise.

1.7 COSTS INCLUDED IN PAYMENT ITEMS

A. Payment for all Bid Items listed in the Bid Schedule shall constitute full compensation for all Work shown and/or specified to be performed under each Bid Item and shall include all necessary and incidental Work not specified to be included in any other Bid Item listed in the Bid Schedule.

B. Contract prices shall include repair, removal, and/or replacement of all items encountered in the field conflicting with the planned gravity systems as depicted in the contract documents at no additional cost to the Owner. Contract prices shall also include purchasing and delivering to the Owner all necessary materials, equipment, supplies, and license fees including installation of all materials, equipment, supplies, all other labor, excavating, filling, permit fees, taxes, insurance, general, administration, and other miscellaneous costs, overhead, and profit as specified herein and as shown on the Drawings and the Contract Forms and Specifications.

1.8 PAYMENT ITEMS

A. Bonds and Insurance (BID ITEM 1)

1. Measurement of the lump sum price established in the Submitted Bid will be based on actual invoice amounts to substantiate the actual bond and insurance premiums.
2. Payment of the lump sum price established in the Submitted Bid will be made at the applicable lump sum amount, as above determined, and will represent full compensation

for providing the required 100 percent Payment Bond, 100 percent Performance Bond, all insurance and mobilization/ demobilization in accordance with the requirements of the General Conditions.

B. Indemnification (BID ITEM 2)

1. Payment will be made to the Contractor on a lump sum basis for considerations for indemnification to Owner and Engineer and Subconsultants as specified in the General Conditions.

C. Mobilization and Demobilization (BID ITEM 3)

1. Measurement

a. Measurement of the lump sum price established in the Submitted Bid will be based on the payment schedule in Paragraph 2 for the mobilization, including, but not limited to, those operations necessary for the movement of personnel, equipment, supplies and incidentals to the project site, and for the establishment of temporary offices, building facilities, safety equipment and first aid supplies, sanitary and other facilities, as required by these specifications, and state and local laws and regulations. The lump sum price bid for Mobilization shall not exceed two and one-half percent (2.5%) of the Base Bid.
b. No payments will be made under this lump sum item for the costs of bonds and any required insurance and other preconstruction expense necessary for the start of the work, including the cost of construction materials.
c. No payments will be made under this lump sum item until the base project schedule has been concurred with by the Owner and Engineer.

2. Payment

a. Payment of the lump sum price established in the Submitted Bid will be made in accordance with the following schedule:

Percent of Job Completion	**Percent of Mobilization Payment**
1st Progress Payment with base schedule concurrence	25%
Seminole Lift Station and Gravity Sewer Installed	50%
New Seminole Lift Station and Gravity Sewer In-Service. Existing Bayview and Seminole Lift Stations demolition completed.	75%
Final Payment	100%

D. Maintenance of Traffic (BID ITEM 4)

1. Measurement of the lump sum price established in the Submitted Bid will be based on percent complete.
2. Payment of the lump sum price established in the Submitted Bid will be made at the applicable lump sum amount for all field work, MOT plans, materials, equipment and incidentals to perform the Work in its entirety, which price shall constitute full compensation for all such work performed in accordance with the requirements of the Contract Documents.

E. Erosion and Sedimentation Control (BID ITEM 5)

1. Measurement of the lump sum price established in the Submitted Bid will be based on percent complete.
2. Payment of the lump sum price established in the Submitted Bid will be made at the applicable lump sum amount for all field work, materials, equipment and incidentals to perform the Work in its entirety, which price shall constitute full compensation for all such work performed in accordance with the requirements of all project permits and of the Contract Documents.

F. Gravity Sewer (BID ITEMS 6-14)

1. Measurement of the unit price established in the Submitted Bid will be based on the linear footage installed complete for all work included in the Contract Documents not listed as a separate line item in the Submitted Bid. This includes all items required to complete the Work including those items not specifically shown but required to complete the Work.
2. No payments will be made under these items until the base project schedule has been concurred with by the Owner and Engineer.
3. 12-inch PVC Gravity Sewer Piping 0-8 Feet Deep (BID ITEM 6)
    a. Measurement will be based on the unit price established in the Submitted Bid. This work includes but is not limited to dewatering, excavation, backfilling/compaction, testing, flushing, connection to existing pipelines, seeding/sodding, pavement repair and restoration.
    b. Payment of the unit price will represent full compensation for installation of the 12-inch PVC Gravity Sewer Piping 0-8 Feet Deep. Payment will also fully compensate the CONTRACTOR any other work which is not specified or shown but is required to complete the work listed in item 6.
4. 12-inch PVC Gravity Sewer Piping 8-10 Feet Deep (BID ITEM 7)
    a. Measurement will be based on the unit price established in the Submitted Bid. This work includes but is not limited to dewatering, excavation, backfilling/compaction, testing, flushing, connection to existing pipelines, seeding/sodding, pavement repair and restoration.
    b. Payment of the unit price will represent full compensation for installation of the 12-inch PVC Gravity Sewer Piping 8-10 Feet Deep. Payment will also fully compensate the CONTRACTOR any other work which is not specified or shown but is required to complete the work listed in item 7.
5. 12-inch PVC Gravity Sewer Piping 10-12 Feet Deep (BID ITEM 8)

a. Measurement will be based on the unit price established in the Submitted Bid. This work includes but is not limited to dewatering, excavation, backfilling/compaction, testing, flushing, connection to existing pipelines, seeding/sodding, pavement repair and restoration.
b. Payment of the unit price will represent full compensation for installation of the 12-inch PVC Gravity Sewer Piping 10-12 Feet Deep. Payment will also fully compensate the CONTRACTOR any other work which is not specified or shown but is required to complete the work listed in item 8.

6. 10-inch PVC Gravity Sewer Piping (BID ITEM 9)
   a. Measurement will be based on the unit price established in the Submitted Bid. This work includes but is not limited to dewatering, excavation, backfilling/compaction, testing, flushing, connection to existing pipelines, seeding/sodding, pavement repair and restoration..
   b. Payment of the unit price will represent full compensation for installation of the 10-inch PVC Gravity Sewer Piping. Payment will also fully compensate the CONTRACTOR any other work which is not specified or shown but is required to complete the work listed in item 9.
7. 12-inch DR-18 Gravity Sewer Piping (BID ITEM 10)
   a. Measurement will be based on the unit price established in the Submitted Bid. This work includes but is not limited to dewatering, excavation, backfilling/compaction, testing, flushing, connection to existing pipelines, seeding/sodding, pavement repair and restoration.
   b. Payment of the unit price will represent full compensation for installation of the 12-inch DR-18 Gravity Sewer Piping. Payment will also fully compensate the CONTRACTOR any other work which is not specified or shown but is required to complete the work listed in item 10.
8. Sewer Manhole 7 Feet Deep (BID ITEM 11)
   a. Measurement will be based on the unit price established in the Submitted Bid. This work includes but is not limited to pipe material transition fittings, testing, connection to existing pipelines, pavement repair and restoration.
   b. Payment of the unit price will represent full compensation for installation of the Sewer Manhole 7-Feet Deep. Payment will also fully compensate the CONTRACTOR any other work which is not specified or shown but is required to complete the work listed in item 11.
9. Sewer Manhole 9 Feet Deep (BID ITEM 12)
   a. Measurement will be based on the unit price established in the Submitted Bid. This work includes but is not limited to pipe material transition fittings, testing, connection to existing pipelines, pavement repair and restoration.
   b. Payment of the unit price will represent full compensation for installation of the Sewer Manhole 9-Feet Deep. Payment will also fully compensate the CONTRACTOR any other work which is not specified or shown but is required to complete the work listed in item 12.
10. Sewer Manhole 10.5 Feet Deep (BID ITEM 13)
    a. Measurement will be based on the unit price established in the Submitted Bid. This work includes but is not limited to pipe material transition fittings, testing, connection to existing pipelines, pavement repair and restoration.
    b. Payment of the unit price will represent full compensation for installation of the Sewer Manhole 10.5-Feet Deep. Payment will also fully compensate the

CONTRACTOR any other work which is not specified or shown but is required to complete the work listed in item 13.

11. Sewer Manhole 11.5 Feet Deep (BID ITEM 14)
    a. Measurement will be based on the unit price established in the Submitted Bid. This work includes but is not limited to pipe material transition fittings, testing, connection to existing pipelines, pavement repair and restoration.
    b. Payment of the unit price will represent full compensation for installation of the Sewer Manhole 11.5-Feet Deep. Payment will also fully compensate the CONTRACTOR any other work which is not specified or shown but is required to complete the work listed in item 14.

G. Pavement (BID ITEM 15)
1. Measurement will be based upon square yard of Pavement as established in the Submitted Bid. This work includes but is not limited to furnishing and installing new pavement, and all materials, equipment, and labor necessary to complete the installation per the Contract Documents.
2. Payment of the unit price will represent full compensation for installation of the pavement per the Contract Documents. Payment will also fully compensate the CONTRACTOR any other work which is not specified or shown but is required to complete the work listed in item 15.

H. Demolition of Bayview Lift Station (BID ITEM 16)

1. Measurement of the lump sum price established in the Submitted Bid will be based on the Schedule of Values and percentage complete for all work included in the Contract Documents not listed as a separate line item in the Submitted Bid. This includes all items required to complete the Work including grading, restoration, and those items not specifically shown but required to complete the Work.
2. No payments will be made under this lump sum item until the base project schedule has been concurred with by the Owner and Engineer.

I. Seminole Lift Station (BID ITEMS 17-45)

1. Construct Precast Wet Well (BID ITEM 17)
    a. Measurement of the lump sum price established in the Submitted Bid will be based on the Schedule of Values and percentage complete for all work included in the Contract Documents not listed as a separate line item in the Submitted Bid. This includes all items required to complete the Work including those items not specifically shown but required to complete the Work.
    b. No payments will be made under this lump sum item until the base project schedule has been concurred with by the Owner and Engineer.
    c. Payment of the lump sum price established in the Submitted Bid will be made at the applicable lump sum amount for all field work, materials, equipment and incidentals to perform the Work in its entirety, which price shall constitute full compensation for all such work performed in accordance with the requirements of all project permits and of the Contract Documents. Payment of these bid items will be made

based on the quantities installed based on the Schedule of Values and as agreed upon by the Owner and Engineer.

2. Construct Lift Station and All Associated Appurtenances (BID ITEM 18)
   a. Measurement of the lump sum price established in the Submitted Bid will be based on the Schedule of Values and percentage complete for all work included in the Contract Documents not listed as a separate line item in the Submitted Bid. This includes all items required to complete the Work including those items not specifically shown but required to complete the Work.
   b. No payments will be made under this lump sum item until the base project schedule has been concurred with by the Owner and Engineer.
   c. Payment of the lump sum price established in the Submitted Bid will be made at the applicable lump sum amount for all field work, materials, equipment and incidentals to perform the Work in its entirety, which price shall constitute full compensation for all such work performed in accordance with the requirements of all project permits and of the Contract Documents. Payment of these bid items will be made based on the quantities installed based on the Schedule of Values and as agreed upon by the Owner and Engineer.
3. Submersible Pump (BID ITEM 19)
   a. Measurement will be based on the unit price established in the Submitted Bid. This work includes but is not limited to installation, electrical wiring, and testing.
   b. Payment of the unit price will represent full compensation for installation of the Submersible Pump. Payment will also fully compensate the CONTRACTOR any other work which is not specified or shown but is required to complete the work listed in item 19.
4. 8-inch DIP Force Main (wet well) (Item 20)
   a. Measurement will be based on the unit price established in the Submitted Bid. This work includes but is not limited to dewatering, excavation, backfilling/compaction, testing, flushing, connection to existing pipelines, seeding/sodding, pavement repair and restoration.
   b. Payment of the unit price will represent full compensation for installation of the 8-inch DIP Force Main (wet well). Payment will also fully compensate the CONTRACTOR any other work which is not specified or shown but is required to complete the work listed in item 20.
5. 8-inch DIP Force Main and Fittings (above ground) (Item 21)
   a. Measurement will be based on the unit price established in the Submitted Bid. This work includes but is not limited to testing, flushing, connection to existing pipelines, seeding/sodding, pavement repair and restoration.
   b. Payment of the unit price will represent full compensation for installation of the 8-inch DIP Force Main and Fittings (above ground). Payment will also fully compensate the CONTRACTOR any other work which is not specified or shown but is required to complete the work listed in item 21.
6. 8-inch Magnetic Flow Meter (BID ITEM 22)
   a. Measurement will be based on the unit price established in the Submitted Bid. This work includes but is not limited to testing, flushing, connection to existing pipelines, seeding/sodding, pavement repair and restoration.
   b. Payment of the unit price will represent full compensation for installation of the 8-inch Magnetic Flow Meter. Payment will also fully compensate the CONTRACTOR any other work which is not specified or shown but is required to complete the work listed in item 22.

7. 8-inch DIP Force Main (buried RJ) (BID ITEM 23)
    a. Measurement will be based on the unit price established in the Submitted Bid. This work includes but is not limited to dewatering, excavation, backfilling/compaction, testing, flushing, connection to existing pipelines, seeding/sodding, pavement repair and restoration.
    b. Payment of the unit price will represent full compensation for installation of the 8-inch DIP Force Main (buried RJ). Payment will also fully compensate the CONTRACTOR any other work which is not specified or shown but is required to complete the work listed in item 23.
8. 8-inch DIP Tee (BID ITEM 24)
    a. Measurement will be based on the unit price established in the Submitted Bid. This work includes but is not limited to testing, flushing, connection to existing pipelines, seeding/sodding, pavement repair and restoration.
    b. Payment of the unit price will represent full compensation for installation of the 8-inch DIP Tee. Payment will also fully compensate the CONTRACTOR any other work which is not specified or shown but is required to complete the work listed in item 24.
9. 8-inch DIP 90 degree bend (buried RJ) (BID ITEM 25)
    a. Measurement will be based on the unit price established in the Submitted Bid. This work includes but is not limited to dewatering, excavation, backfilling/compaction, testing, flushing, connection to existing pipelines, seeding/sodding, pavement repair and restoration.
    b. Payment of the unit price will represent full compensation for installation of the 8-inch DIP 90 degree bend (buried RJ) Payment will also fully compensate the CONTRACTOR any other work which is not specified or shown but is required to complete the work listed in item 25.
10. 8-inch DIP 45 degree bend (buried RJ) (BID ITEM 26)
    a. Measurement will be based on the unit price established in the Submitted Bid. This work includes but is not limited to dewatering, excavation, backfilling/compaction, testing, flushing, connection to existing pipelines, seeding/sodding, pavement repair and restoration.
    b. Payment of the unit price will represent full compensation for installation of the 8-inch DIP 45 degree bend (buried RJ) Payment will also fully compensate the CONTRACTOR any other work which is not specified or shown but is required to complete the work listed in item 26.
11. 8-inch Gate Valve (BID ITEM 27)
    a. Measurement will be based on the unit price established in the Submitted Bid. This work includes but is not limited to testing, flushing, connection to existing pipelines, seeding/sodding, pavement repair and restoration.
    b. Payment of the unit price will represent full compensation for installation of the 8-inch Gate Valve. Payment will also fully compensate the CONTRACTOR any other work which is not specified or shown but is required to complete the work listed in item 27.
12. 8-inch Tapping Sleeve and Valve (BID ITEM 28)
    a. Measurement will be based on the unit price established in the Submitted Bid. This work includes but is not limited to testing, flushing, connection to existing pipelines, seeding/sodding, pavement repair and restoration.
    b. Payment of the unit price will represent full compensation for installation of the 8-inch Tapping Sleeve Valve. Payment will also fully compensate the

CONTRACTOR any other work which is not specified or shown but is required to complete the work listed in item 28.

13. 8-inch DIP Emergency Pump-out Connection (BID ITEM 29)
    a. Measurement will be based on the unit price established in the Submitted Bid. This work includes but is not limited to testing, flushing, connection to existing pipelines, seeding/sodding, pavement repair and restoration.
    b. Payment of the unit price will represent full compensation for installation of the 8-inch DIP Emergency Pump-out Connection. Payment will also fully compensate the CONTRACTOR any other work which is not specified or shown but is required to complete the work listed in item 29.
14. 8-inch Plug Valve (BID ITEM 30)
    a. Measurement will be based on the unit price established in the Submitted Bid. This work includes but is not limited to testing, flushing, connection to existing pipelines, seeding/sodding, pavement repair and restoration.
    b. Payment of the unit price will represent full compensation for installation of the 8-inch Plug Valve. Payment will also fully compensate the CONTRACTOR any other work which is not specified or shown but is required to complete the work listed in item 30.
15. 8-inch Check Valve (BID ITEM 31)
    a. Measurement will be based on the unit price established in the Submitted Bid. This work includes but is not limited to testing, flushing, connection to existing pipelines, seeding/sodding, pavement repair and restoration.
    b. Payment of the unit price will represent full compensation for installation of the 8-inch Check Valve. Payment will also fully compensate the CONTRACTOR any other work which is not specified or shown but is required to complete the work listed in item 31.
16. 8-inch Tapping Sleeve and Valve (BID ITEM 32)
    a. Measurement will be based on the unit price established in the Submitted Bid. This work includes but is not limited to testing, flushing, connection to existing pipelines, seeding/sodding, pavement repair and restoration.
    b. Payment of the unit price will represent full compensation for installation of the 8-inch Tapping Sleeve and Valve. Payment will also fully compensate the CONTRACTOR any other work which is not specified or shown but is required to complete the work listed in item 32.
17. Air Release Valve (BID ITEM 33)
    a. Measurement will be based on the unit price established in the Submitted Bid. This work includes but is not limited to testing, flushing, connection to existing pipelines, seeding/sodding, pavement repair and restoration.
    b. Payment of the unit price will represent full compensation for installation of the Air Release Valve. Payment will also fully compensate the CONTRACTOR any other work which is not specified or shown but is required to complete the work listed in item 33.
18. Pressure Regulating Valve (BID ITEM 34)
    a. Measurement will be based on the unit price established in the Submitted Bid. This work includes but is not limited to testing, flushing, connection to existing pipelines, seeding/sodding, pavement repair and restoration.
    b. Payment of the unit price will represent full compensation for installation of the Pressure Regulating Valve. Payment will also fully compensate the CONTRACTOR

any other work which is not specified or shown but is required to complete the work listed in item 34.

19. Pipe Support (BID ITEM 35)
    a. Measurement will be based on the unit price established in the Submitted Bid. This work includes but is not limited to testing, flushing, connection to existing pipelines, seeding/sodding, pavement repair and restoration.
    b. Payment of the unit price will represent full compensation for installation of the Pipe Support. Payment will also fully compensate the CONTRACTOR any other work which is not specified or shown but is required to complete the work listed in item 35.
20. Fence (BID ITEM 36)
    a. Measurement will be based upon linear feet of fencing installed as established in the Submitted Bid. This work includes but is not limited to furnishing and installing new fencing and all materials, equipment, and labor necessary to complete the installation per the Contract Documents.
    b. Payment of the unit price will represent full compensation for installation of the Fence per the Contract Documents. Payment will also fully compensate the CONTRACTOR any other work which is not specified or shown but is required to complete the work listed in item 36.
21. Gate (BID ITEM 37)
    a. Measurement will be based upon gate installation as established in the Submitted Bid. This work includes but is not limited to furnishing and installing the new gate and all materials, equipment, and labor necessary to complete the installation per the Contract Documents.
    b. Payment of the unit price will represent full compensation for installation of the Gate per the Contract Documents. Payment will also fully compensate the CONTRACTOR any other work which is not specified or shown but is required to complete the work listed in item 37.
22. Concrete Driveway, Walkways, Pads (ITEM 38)
    a. Measurement will be based upon square yard of Concrete Driveways, Walkways, and Pads as established in the Submitted Bid. This work includes but is not limited to furnishing and installing new Concrete Driveways, Walkways, Pads, and all materials, equipment, and labor necessary to complete the installation per the Contract Documents.
    b. Payment of the unit price will represent full compensation for installation of the Concrete Driveways, Walkways, and Pads per the Contract Documents. Payment will also fully compensate the CONTRACTOR any other work which is not specified or shown but is required to complete the work listed in item 38.
23. Generator Pad (ITEM 39)
    a. Measurement will be based upon cubic yard of the Generator Pads as established in the Submitted Bid. This work includes but is not limited to furnishing and installing new Generator Pads, and all materials, equipment, and labor necessary to complete the installation per the Contract Documents.
    b. Payment of the unit price will represent full compensation for installation of the Generator Pads per the Contract Documents. Payment will also fully compensate the CONTRACTOR any other work which is not specified or shown but is required to complete the work listed in item 39.
24. Retaining Walls (ITEM 40)

a. Measurement of the lump sum price established in the Submitted Bid will be based on the Schedule of Values and percentage complete for all work included in the Contract Documents not listed as a separate line item in the Submitted Bid. This includes all items required to complete the Work including those items not specifically shown but required to complete the Work.
b. No payments will be made under this lump sum item until the base project schedule has been concurred with by the Owner and Engineer.
c. Payment of the lump sum price established in the Submitted Bid will be made at the applicable lump sum amount for all field work, materials, equipment and incidentals to perform the Work in its entirety, which price shall constitute full compensation for all such work performed in accordance with the requirements of all project permits and of the Contract Documents. Payment of these bid items will be made based on the quantities installed based on the Schedule of Values and as agreed upon by the Owner and Engineer.

25. Bollards (ITEM 41)
    a. Measurement will be based upon contract unit price of the Bollards per each unit completed and accepted as established in the Submitted Bid. This work includes but is not limited to furnishing and installing new Bollards, and all materials, equipment, and labor necessary to complete the installation per the Contract Documents.
    b. Payment of the unit price will represent full compensation for installation of the Bollards per the Contract Documents. Payment will also fully compensate the CONTRACTOR any other work which is not specified or shown but is required to complete the work listed in item 41.
26. Guardrail (ITEM 42)
    a. Measurement will be based upon linear feet of Guardrail installed as established in the Submitted Bid. This work includes but is not limited to furnishing and installing new guardrails and all materials, equipment, and labor necessary to complete the installation per the Contract Documents.
    b. Payment of the unit price will represent full compensation for installation of the Guardrails per the Contract Documents. Payment will also fully compensate the CONTRACTOR any other work which is not specified or shown but is required to complete the work listed in item 42.
27. Sod (ITEM 43)
    a. Measurement will be based upon square feet of sod installed as established in the Submitted Bid. This work includes but is not limited to furnishing and installing sod and all materials, equipment, and labor necessary to complete the installation per the Contract Documents.
    b. Payment of the unit price will represent full compensation for installation of the sod per the Contract Documents. Payment will also fully compensate the CONTRACTOR any other work which is not specified or shown but is required to complete the work listed in item 43.
28. Relocate Water Service, Backflow, and Hose Bib (ITEM 44)
    a. Measurement of the lump sum price established in the Submitted Bid will be based on the Schedule of Values and percentage complete for all work included in the Contract Documents not listed as a separate line item in the Submitted Bid. This includes all items required to complete the Work including those items not specifically shown but required to complete the Work.
    b. No payments will be made under this lump sum item until the base project schedule has been concurred with by the Owner and Engineer.

c. Payment of the lump sum price established in the Submitted Bid will be made at the applicable lump sum amount for all field work, materials, equipment and incidentals to perform the Work in its entirety, which price shall constitute full compensation for all such work performed in accordance with the requirements of all project permits and of the Contract Documents. Payment of these bid items will be made based on the quantities installed based on the Schedule of Values and as agreed upon by the Owner and Engineer.

29. Restore Curb and Gutter (ITEM 45)
    a. Measurement will be based upon linear feet of curb and gutter restoration as established in the Submitted Bid. This work includes but is not limited to furnishing, installing, all materials, equipment, and labor necessary to complete necessary curb and gutter restoration.
    b. Payment of the unit price will represent full compensation for the necessary restoration of the curb and gutters per the Contract Documents. Payment will also compensate the CONTRACTOR any other work which is not specified or shown but is required to complete the work listed in item 45.

J. Demolition of Seminole Lift Station (BID ITEM 46)

1. Measurement of the lump sum price established in the Submitted Bid will be based on the Schedule of Values and percentage complete for all work included in the Contract Documents not listed as a separate line item in the Submitted Bid. This includes all items required to complete the Work including grading, restoration, and those items not specifically shown but required to complete the Work.
2. No payments will be made under this lump sum item until the base project schedule has been concurred with by the Owner and Engineer.

K. Electrical (BID ITEMS 47-48**)**

1. Measurement of the lump sum price established in the Submitted Bid will be based on percent complete.
2. Payment of the lump sum price established in the Submitted Bid will be made at the applicable lump sum amount for all field work, materials, equipment, conduit, wiring, electrical components, cabinets, cabinet sunshades, lightning protection system, communication equipment, instrumentation, controls, and incidentals to perform the Work in its entirety, which price shall constitute full compensation for all such work performed in accordance with the requirements of all project permits and of the Contract Documents.

1.9 APPLICATIONS FOR PAYMENT

A. Each Application for Payment following the initial Application for Payment shall be consistent with previous applications and payments as certified by Engineer and paid for by Owner.

B. Payment Application Times: Submit Application for Payment to Engineer by the 5th of the month. The period covered by each Application for Payment is one month, ending on the last day of the month.

1. Submit draft copy of Application for Payment twenty days prior to due date for review by Engineer.

C. Application for Payment Forms: Use form provided by the Owner or EJCDC Document C-620 if no specific form is provided by the Owner for Applications for Payment.

1. Other Application for Payment forms proposed by the Contractor may be acceptable to Engineer and Owner. Submit forms for approval with initial submittal of schedule of values.

D. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Engineer will return incomplete applications without action.

1. Entries shall match data on the Schedule of Values and Contractor's Construction Schedule. Use updated schedules if revisions were made.
2. Include amounts for work completed following previous Application for Payment, whether or not payment has been received. Include only amounts for work completed at time of Application for Payment.
3. Include amounts of Change Orders and Construction Change Directives issued before last day of construction period covered by application.
4. Indicate separate amounts for work being carried out under Owner-requested project acceleration.

E. Stored Materials: Include in Application for Payment amounts applied for materials or equipment purchased or fabricated and stored, but not yet installed.

1. Provide certificate of insurance, evidence of transfer of title to Owner, and consent of surety to payment.
2. Provide supporting documentation that verifies amount requested, such as paid invoices. Match amount requested with amounts indicated on documentation; do not include overhead and profit on stored materials. Materials must be stored close by so quantities can be confirmed by the Owner.
3. Provide summary documentation for stored materials indicating the following:

    a. Value of materials previously stored and remaining stored as of date of previous Applications for Payment.
    b. Value of previously stored materials put in place after date of previous Application for Payment and on or before date of current Application for Payment.
    c. Value of materials stored since date of previous Application for Payment and remaining stored as of date of current Application for Payment.

F. Transmittal: Submit two signed and notarized original copies of each Application for Payment to Engineer by a method ensuring receipt. One copy shall include waivers of lien and similar attachments if required.

1. Transmit each copy with a transmittal form listing attachments and recording appropriate information about application.

G. Waivers of Lien: With each Application for Payment, submit waivers of lien from entities lawfully entitled to file a lien arising out of the Contract and related to the Work covered by the payment subcontractors, sub-subcontractors, and suppliers for construction period covered by the previous application.

1. Submit partial waivers on each item for amount requested in previous application, after deduction for retainage, on each item.
2. When an application shows completion of an item, submit conditional final or full waivers.
3. Owner reserves the right to designate which entities involved in the Work must submit waivers.
4. Submit final Application for Payment with or preceded by conditional final waivers from every entity involved with performance of the Work covered by the application who is lawfully entitled to a lien.
5. Waiver Forms: Submit executed waivers of lien on forms acceptable to Owner.

H. Maintain an updated set of drawings to be used as record drawings in accordance with Section 017839. As a prerequisite for monthly progress payments, exhibit the updated record drawings for review by Owner and Engineer for completeness and accuracy.

I. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:

1. List of subcontractors.
2. Schedule of values.
3. Contractor's construction schedule.
4. Products list (preliminary if not final).
5. Sustainable design action plans, including preliminary project materials cost data.
6. Schedule of unit prices.
7. Submittal schedule.
8. List of Contractor's staff assignments.
9. List of Contractor's principal consultants.
10. Copies of building permits.
11. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
12. Initial progress report.
13. Report of preconstruction conference.

J. Application for Payment at Substantial Completion: After Engineer issues the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.

1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.

    a. Complete administrative actions, submittals, and Work proceeding this application, as described in Section 017700 “Closeout Procedures.”

2. Include initial submittal of closeout record drawings in accordance with Section 017839.

3. This application shall reflect Certificate(s) of Substantial Completion issued previously for Owner occupancy of designated portions of the Work.

K. Final Payment Application: After completing Project closeout requirements, submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:

1. Evidence of completion of Project closeout requirements.
2. Certification of completion of final punch list items.
3. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
4. Final submittal of closeout record drawings in accordance with Section 017839.
5. Updated final statement, accounting for final changes to the Contract Sum.
6. Evidence that claims have been settled.
7. Final meter readings for utilities, a measured record of stored fuel, and similar data as of date of Substantial Completion or when Owner took possession of and assumed responsibility for corresponding elements of the Work.
8. Final liquidated damages settlement statement.
9. Proof that taxes, fees, and similar obligations are paid.
10. Waivers and releases.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION 012900

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A Division of CEMEX

Driveways Incorporated

Submittal No. : 56586 Date Issued: 9/19/2025

RE: City of Titusville - Riverside Drive Force Main Replacement

Dear Sir / Madam,

We propose to furnish the following concrete mix for the above referenced project:

Mix Code Number	Description	Use
1206224	4000 psi in 28 days - Exposed 1/2" River Gravel	

Please Note: You must use Mix Code for ordering purposes.

The above mix has been proportioned in accordance with the applicable portions of ACI 211 and your verbal request.

The proposed mix designs will meet the stated strengths when test specimens are manufactured and tested in accordance with current ASTM standards and evaluated per ACI recommended standards and practices.

CEMEX requests copies of all approved mix designs prior to jobsite delivery. In order to comply with ACI 318-19 Paragraph 26.4.3.1 (b), we request that CEMEX be included on the distribution list for all Concrete Test Reports. Additionally, the 2023 Florida Building Code, Building, Eighth Edition Article 1703.6.2.1 states:" Where this code, a referenced standard, a building official or inspection agency requires concrete testing on a project, test reports shall be provided to the building official or inspection agency, the registered design professional of record, and the material supplier concurrent when reporting results to the client."
It is suggested that a pre-pour conference be held at the jobsite prior to jobsite delivery. The purpose of the meeting would be to answer any questions regarding responsibilities in scheduling and jobsite operation.
Please forward this information and data to the proper authorities for approval.

Cristian Bravo
Mix Design Specialist

Backup Data
Enclosures:

SDS for Ready Mixed Concrete:
Available at: https://www.cemexusa.com/Products-and-Services/Safety-Data-Sheets

A Division of CEMEX

Date Issued: 9/19/2025

SUPPLIER : CEMEX Cocoa
MIX CODE : 1206224 *Mix Code must be used when ordering concrete.*
DESCRIPTION : 4000 psi in 28 days - Exposed 1/2" River Gravel
CLIENT : Driveways Incorporated
PROJECT : City of Titusville - Riverside Drive Force Main Replacement
USE :

RMM,400,IEXR,3503,2:-;564

Material	Source	Description	Spec. Grav.	Weight (lb)
Type IL	CEMEX	ASTM C-595, Type IL Cement	3.15	564
Fine Aggregate	CEMEX	ASTM C-33, Natural Sand	2.63	961
Coarse Aggregate	CEMEX	ASTM C-33, 1/2" River Gravel	2.63	2,137
Type D Water Reducer & Retarder	CEMEX ADMIX	ASTM C-494, Type A/D, ISOPLAST 1440		
Water		ASTM C-94,, Water 34.0 Gal.	1.00	283
			TOTAL	3945

Specified Slump: 3.00 To 5.00 in.
Designed Air: Entrapped
Designed Unit Weight: 145.7 lbs./cu.ft.
Designed W/C Ratio: 0.50

NOTES:
CEMEX has no knowledge or authority regarding where this mix is to be placed. Therefore, it is the responsibility of the project architect/engineer, and or contractor to ensure that the above designed mix parameters of compressive strength, water cement ratio, cement content, and air content are appropriate for the anticipated environmental conditions (ie, ACI-318-19 Chapter 19, and the local Building Codes).

Chemical admixtures are added in accordance with the manufacturers recommendations.

Designed mix cementitious content is stated as a minimum. CEMEX reserves the right to increase cementitious content and may use either Type I/II or Type IL cement in this mix design. CEMEX also reserves the right to adjust aggregate weights to maintain design aggregate volumes.

COMMENTS:

Cristian Bravo
Mix Design Specialist

Certificate for Aggregate in Portland Cement Concrete

Sieve	ASTM C33 #7 (Specification) Percent Passing	#7 River Gravel (Typical) Percent Passing
3/4" (19 mm)	100	100
1/2" (12.5 mm)	90 - 100	93
3/8" (9.5 mm)	40 - 70	50
#4 (4.75 mm)	0 - 15	8
#8 (2.36 mm)	0 - 5	2

Specific Gravity: 2.65

Absorption: .42%

L. A. Abrasion 30%

Sodium Soundness Sulfate Loss <1%

This material meets the requirements of ASTM C33 for size number 7. This information complies with noncalcarious requirements. The information on this report was supplied by Conrad Yelvington Dist., Inc.

Scott Emerson
For and on behalf of CEMEX

Florida Region
1557 Jupiter Park Drive, Suite 1, Jupiter, FL 33458, USA, (561)745-5240 Fax (561)746-1727

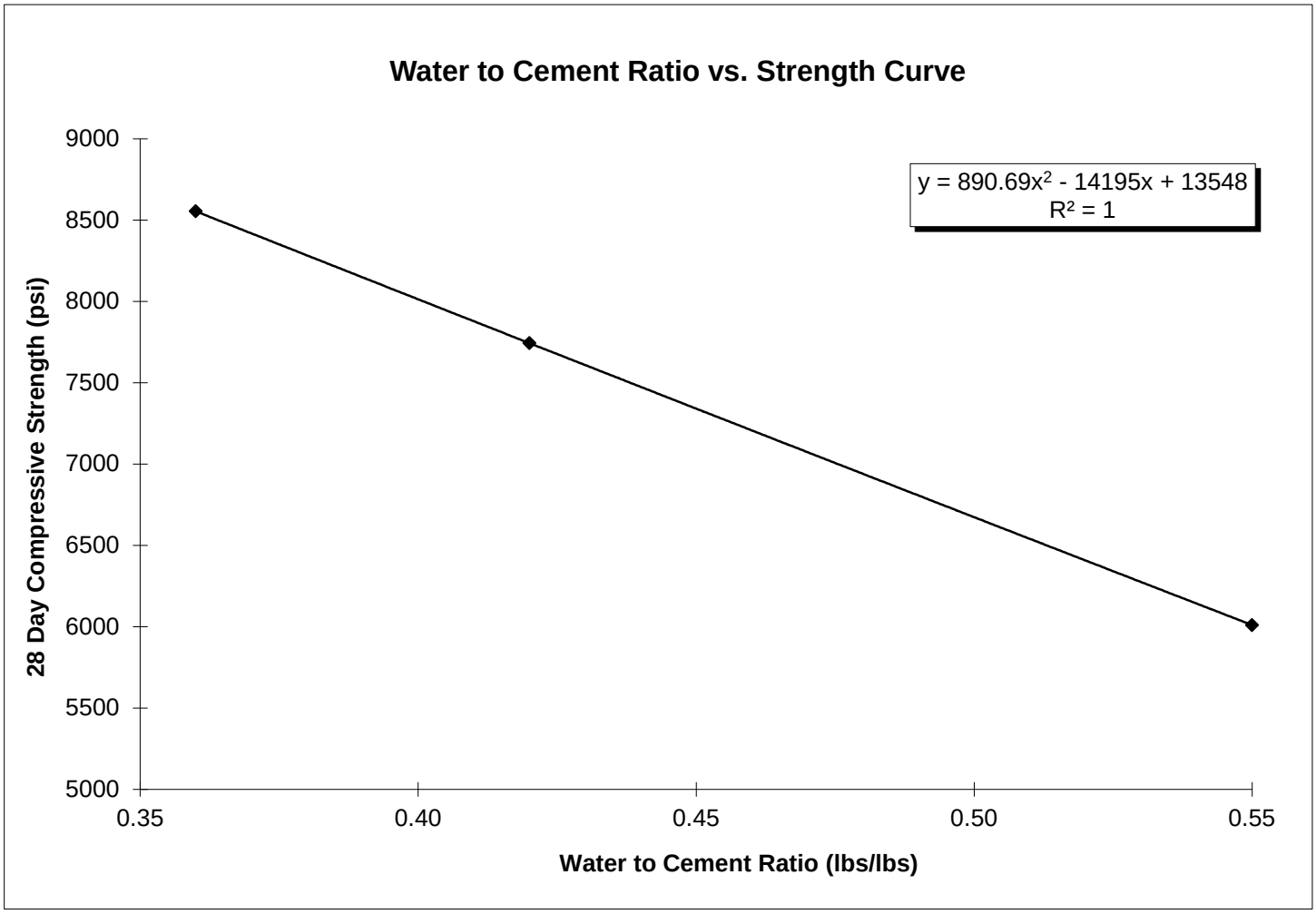
W/C Ratio/Strength Relationship- #7 River Gravel, Type I/II Cement

Concrete Constituents

Cement	ASTM C-150 Type I/II
Fine Aggregate	ASTM C-33 Natural Sand
Coarse Aggregate	ASTM C-33 River Gravel
Admix	ASTM C-494, D

Mix Data

Lab. No.	4491	4492	4493
Cement lbs/cy	500	620	785
Sand (ssd) lbs/cy	1315	1162	1004
#7 Gravel (ssd) lbs/cy	1777	1829	1849
WRDA oz/cwt	5	5	5
W/C Ratio	0.55	0.42	0.36
28 Day Avg (psi)	6010	7743	8553



Miami Plant
1200 NW 137th ave
Miami, Florida. 33182
Phone (305) 229-2976 / FAX (305) 229-8015

CEMENT MILL TEST REPORT

Cement Identified as: Type IL (11) (MS)

Date of Report: 07/08/25

Production Period:
Beginning: 1-Jun-25
Ending: 30-Jun-25

Silos: 21,22,32,42,35,44,52,65,66

CHEMICAL REQUIRMENTS ASTM C114 and AASHTO M 240	Test Results	Specifications	ASTM C 595 & AASHTO M240 IL				
Sulfur Trioxide (SO3) % [A]	**3.02**	Maximum	3				
Loss on Ignition (LOI) %	**5.52**	Maximum	10				
Limestone %	**11.2**	Min / Max	5 / 15				
Alkalies (Na2O equivalent) %	**0.23**						
CaCO3 in limestone %	**97**	Minimum	40				
Total Carbonates %	**98.9**	Minimum	70				
PHYSICAL REQUIRMENTS							
(ASTM C204) Blaine Fineness, cm2/g	**5060**	for information					
(ASTM C191) Time of Setting (Vicat)							
Initial Set, minutes	**107**	Min / Max	45 / 420				
Final Set, minutes	**207**						
(ASTM C185) Air Content of Mortar %	**7.0**	Maximum	12				
(ASTM C151) Autoclave Contraction %	**-0.016**	Maximum	0.20				
(ASTM C151) Autoclave Expansion %	**-**	Maximum	0.80				
(ASTM C1038) Expansion in Water %*	**0.003**	Maximum	0.020	0.020	0.020	0.020	
(ASTM C430) Passing No. 325 Sieve %	**96.4**	for information					
(ASTM C1702) Heat of Hydration/Calorimetry cal/g	**68.5**	for information					
(ASTM C188) Density of Hydraulic Cement g/cm3	**3.06**	for information					
(ASTM C109) Compressive Strength, psi (Mpa)							
1 Day	**2200 (15.2)**	----	----				
3 Days	**3880 (26.8)**	Minimum	1890 (13.0)				
7 Days	**5460 (37.7)**	Minimum	2900 (20.0)				
28 Days [C]	**7650 (52.8)**	Minimum	3620 (25.0)				

SO3 limit may be exceeded demonstrating expansion according to ASTM C 1038 ≤ 0.020

Cemex hereby certifies that this cement meets or exceeds the chemical and physical specifications of most recent edition of :
Cement contains up to 3% of Inorganic processing addtion.
Cement C3A content is estimated to be 6% based on the clinker content.

[x] ASTM C-595 IL(11)
[x] Florida Spec 921

Omar Ortiz
Omar Ortiz
Quality Control Manager

We certify that the above described data represents the cement manufactured during the production period indicated.
Cemex is not responsible for the improper use or workmanship that may be associated with the use of this cement.

ADDITIONAL DATA
Limestone Analysis

SiO2 (%)	3.64
Al2O3 (%)	0.36
Fe2O3 (%)	0.35
CaO (%)	54.6
SO3 (%)	0.32
MgO (%)	0.70

CEMEX

NATURAL SAND AGGREGATE PROPERTIES

TYPICAL GRADING (% FINER)					
MINE	UNION	474	Davenport	GATOR	IMMOKALEE
FDOT MINE NO.	GA-397	11-283	16-787	16-564	03-891
MATERIAL TYPE	NATURAL	NATURAL	NATURAL	NATURAL	NATURAL
SIEVE SIZE					
2.0 in.					
1 1/2 in.					
1.0 in.					
3/4 in.					
1/2 in.					
3/8 in.	100.0	100.0	100.0	100.0	100.0
#4	99.9	100.0	100.0	100.0	99.7
#8	97.5	99.7	99.8	99.9	96.1
#16	88.8	92.8	95.3	94.6	84.4
#30	61.6	58.9	72.7	62.3	54.2
#50	18.1	22.9	47.5	27.3	21.2
#100	1.7	2.7	8.5	4.6	1.2
#200	0.2	0.1	0.1	0.1	0.1

TYPICAL GRADING (% FINER)					
MINE	PALMDALE	GRANDIN	LAKE WALES		
FDOT MINE NO.	05-455	76-349	16-078		
MATERIAL TYPE	NATURAL	NATURAL	NATURAL		
SIEVE SIZE					
2.0 in.					
1 1/2 in.					
1.0 in.					
3/4 in.					
1/2 in.					
3/8 in.	100.0	100.0	100.0		
#4	100.0	99.7	100.0		
#8	99.5	97.7	99.3		
#16	91.6	85.9	94.2		
#30	60.4	59.2	65.6		
#50	24.3	24.6	28.1		
#100	2.4	3.9	3.8		
#200	0.1	0.2	0.1		

January 2, 2025

Re: General Certification Cemex Admixture ISOPLAST 1440

To Whom It May Concern,

This is to certify that the **ISOPLAST 1440**, a normal-range water reducer and retarder, as manufactured and supplied by CEMEX Admix USA, LLC is formulated to comply with the Standard Specifications for Chemical Admixtures for Concrete, ASTM C494 and AASHTO M 194 Type A and D.

ISOPLAST 1440 does not contain calcium chloride or chloride containing compounds as a functional ingredient. Chloride ions may be present in trace amounts contributed from the process water used in manufacturing.

Sincerely,

Mark Niemuth, Ph.D.
Director of Technical Support – United States of America
24407 Hufsmith Kohrville Rd., Tomball, Texas 77375 USA
Mark.NiemuthM@cemex.com
+1(918) 625-3140
www.cemexusa.com

ENGINEERING SCIENCES, INC.

Consulting Engineers in the Earth Sciences, Geotechnology, Hydrogeology and Construction Materials Testing

June 8, 2007

City of Titusville
Water Resources Department
2836 Garden Street
Titusville, Florida 32796

Attention: Ms. Janet Elrod, Utility Engineering Manager

Subject: **Subsurface Soil and Groundwater Level Investigation, Proposed Sanitary Sewer Improvements, Seminole/Grace Street, Titusville, Florida (PN 06-E1427.01)**

Dear Ms. Elrod:

As requested, Yovaish Engineering Sciences, Inc., has completed a subsurface soil and groundwater level investigation for the pipeline referenced above. The following report presents the results of our field and laboratory investigations and provides our evaluations of the subsoils with respect to their suitability for support of the proposed sanitary sewer improvements.

1.0 SITE AND PROJECT DESCRIPTION

The subject of this investigation is the proposed sanitary sewer improvements, located along Riverside Drive from Bayview Street heading north to Grace Street, in the City of Titusville, Florida. The approximate location and configuration of the proposed sewer route is depicted on the Location Plan on Figure 1.

Based upon information provided to us, we understand that the proposed improvements will consist of approximately 1,100 lineal feet of gravity sanitary sewer (to be placed under the existing roadway and by direct drilling methods). The construction of receiving manholes (at approximately 400 feet on center) and a lift station will also be required. Details for the proposed lift station were not available to us. However, based upon discussions during a project team meeting, we have estimated that the bottom of the lift station may extend 25 to 30 feet below the existing grade.

2.0 FIELD AND LABORATORY INVESTIGATIONS

2.1 Standard Penetration Test Borings

The field investigation consisted of performing five (5) test borings within the limits of the proposed sanitary sewer alignment. In order to help prevent potential damage to existing utilities, the upper 4 to 8 feet of the borings were performed using hand operated equipment. A

953 Sunshine Lane • Altamonte Springs, FL 32714
Phone: 407-774-9383 • Fax: 407-478-8978

RECEIVED
DATE 6-18-07
UTILITY ENGINEERING

penetrometer probe, consisting of a 60^0 cone point on a ½ inch diameter probe rod leading to a proving ring and dial gauge, was used at 1 foot depth intervals at each boring in order to provide a relative measure of density and consistency of the encountered soils. The remaining portions of the borings were sampled at frequent intervals with a split-barrel sampler driven by a 140-pound hammer, falling 30 inches, in general accordance with ASTM D-1586 testing procedures. The location of these borings are shown on the Location Plan on Figure 1 and are labeled TB-1 through TB-5.

2.2 Index Property Tests

Representative samples from each soil layer encountered at each auger boring location were sealed in air-tight containers in the field to prevent moisture loss and returned to our laboratory for examination by a geotechnical engineer. Representative samples were tested for their index properties to aid in soil classification. Laboratory tests performed included natural moisture content and percent passing the U.S. No. 200 Sieve. The results of the laboratory testing performed as part of our scope of services on this project are shown adjacent to the Soil Profiles on Figure 2. The Unified Soil Classification Symbol for each soil stratum as determined by visual examination and limited laboratory testing is presented in the attendant Soil Legend.

3.0 SUBSOIL AND GROUNDWATER LEVEL CONDITIONS

3.1 SCS Soil Delineations

The soil types within the area under study were mapped by the USDA Soil Conservation Service (SCS) and subsequently published in the Brevard County Soil Survey Report. The soil type mapped within the proposed building area, Pomello-Urban land complex (#50), is considered to be moderately well drained with seasonal high groundwater levels occurring within 3.5 to 5.0 feet of the ground surface.

3.2 Soil Stratigraphy

Relatively uniform subsurface soil conditions were encountered by the test borings. Approximately 6 inches of very hard concrete pavement was encountered by the borings performed within the roadways and approximately 8 inches of organic fine sand with peat (Stratum 1A) was encountered at the proposed lift station site. Below the surficial layers, light and dark colored fine sand (Strata 1 through 3) followed by dark colored slightly silty sand and silty fine sand with pieces of shell (Strata 4 through 7) were encountered to the boring termination depths. A more detailed description of the soils encountered, with respect to stratigraphy, is presented in the form of Soil Profiles on Figure 2.

Based upon the results of the hand penetrometer testing procedures the subsoils in the upper 6 feet vary from loose to medium dense. Base upon the Standard Penetration Testing Procedures, the encountered soils below 6.0 feet generally exist in a very dense/hard to a depth of approximately

15 feet. Below 15 feet, the subsoils vary from loose to medium dense conditions. The penetration test results, in the form of blow-counts per foot and hand penetrometer resistance, are included adjacent to the Soil Profiles on Figure 2.

3.3 Groundwater Level Conditions

3.3.1 Measured Groundwater Levels: The depth to the shallow groundwater table was measured in the open bore holes at the time the borings were performed by carefully inspecting the relative moisture of the recovered samples. The estimated groundwater levels varied from approximately 6.2 to 7.3 feet below the existing ground surface in January 2007. The encountered groundwater levels are indicated adjacent to the Soil Profiles shown on Figure 2.

3.3.2 Normal Seasonal High Groundwater Levels: The groundwater table on this site will fluctuate according to the frequency and amount of rainfall. Based upon review of published data, the antecedent rainfall conditions and the subsoil conditions encountered, it is our preliminary opinion that the seasonal high groundwater level will occur approximately 2.0 feet above the encountered groundwater levels. The estimated seasonal high groundwater tables are indicated adjacent to the Soil Profiles shown on Figure 2.

4.0 EVALUATIONS AND RECOMMENDATIONS

4.1 General

Based on our evaluation of the field investigative results, the subsoils encountered are suitable for the support of the pipe line using the proposed directional bore procedures. In addition, the subsoils are suitable for support of the proposed lift station.

In order to minimize damage to existing roadway improvements, the directional bore method described above was selected. In addition, we understand that the walls of the lift station will comprise modular precast concrete elements. The concrete elements will be installed by excavating from within the structure and advancing its depth. This type of structure and installation procedure has been successfully used within the City of Titusville. By eliminating the need for extensive dewatering and deep temporary shoring, this type of lift station should be less costly than other available alternatives.

4.1 Geotechnical Recommendations for Sanitary Lift Station

4.1.1 Foundation Support: It is our understanding that the proposed Lift Station will consist of a reinforced concrete structure extending to depths ranging from 25 to 30 feet below the existing grade. Foundation Support: The construction of the proposed Lift Station will involve the removal of ±25 to 30 feet of overburden soils. The net foundation load applied at a depth of 25 feet is anticipated to be small (less than 1,000 psf). Therefore, in consideration that the soil zone below the bottom of the Lift Station exists in a medium dense condition the net increase in soil stress should result in negligible settlement.

4.1.2 Lateral Earth Pressures: The walls of the proposed Lift Station will be fixed at the top and will not be allowed to rotate; therefore, it is our opinion that the pressures exerted on the structure by the adjacent soil may be represented by lateral at-rest earth pressures. The structure should be designed to resist "at rest" lateral earth pressures equivalent to a fluid density weighing 55 pounds per cubic foot (pcf) above the water table and 35 pcf below the water table. The hydrostatic pressure of groundwater should be added for the portion of the structure below the water table.

4.1.3 Hydrostatic Uplift Pressures: The lift station should also be designed to resist uplift pressures exerted on the structure by the prevailing groundwater table. The uplift pressure will be greatest when the structure is drained for maintenance, therefore a positive means of uplift protection will be necessary. As such, the design of the lift station should include hydrostatic pressures.

5.0 CLOSURE

It has been a pleasure performing our engineering services for you and we trust that the information provided herein satisfies your immediate needs. If you have any questions regarding the contents of this report, or if we can be of any further assistance, please do not hesitate to contact the undersigned.

Sincerely,

YOVAISH ENGINEERING SCIENCES, INC.

6-14-07

Douglas J. Yovaish, P.E.
Principal Engineer
Florida Registration No. 52247

Attachments: Figures 1 and 2

4.1.2 Lateral Earth Pressures: The walls of the proposed Lift Station will be fixed at the top and will not be allowed to rotate; therefore, it is our opinion that the pressures exerted on the structure by the adjacent soil may be represented by lateral at-rest earth pressures. The structure should be designed to resist "at rest" lateral earth pressures equivalent to a fluid density weighing 55 pounds per cubic foot (pcf) above the water table and 35 pcf below the water table. The hydrostatic pressure of groundwater should be added for the portion of the structure below the water table.

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5.0 CLOSURE

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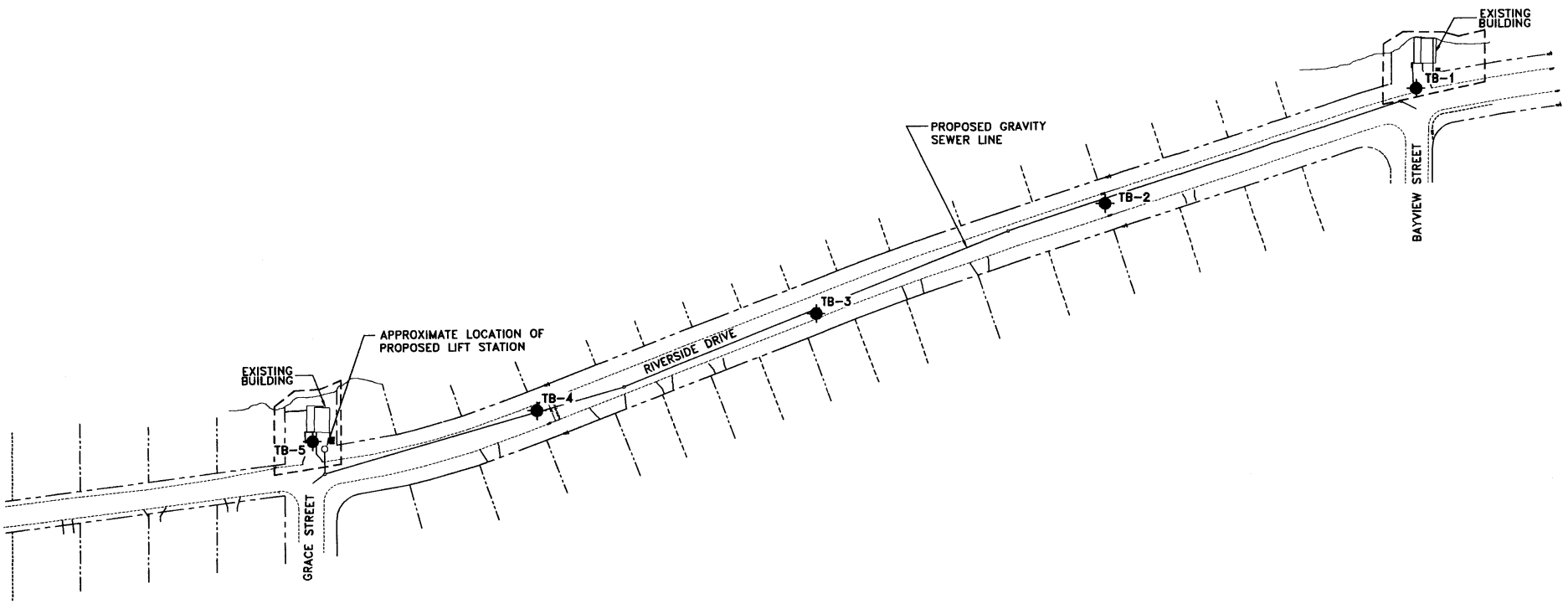
Sincerely,

YOVAISH ENGINEERING SCIENCES, INC.

6-14-07

Douglas J. Yovaish, P.E.
Principal Engineer
Florida Registration No. 52247

Attachments: Figures 1 and 2



LOCATION PLAN

0 25 50 100

Scale in Feet

LEGEND

AUGER BORING LOCATION

SUBSOIL & GROUNDWATER LEVEL INVESTIGATION

SEMINOLE (GRACE ST.) LIFT STATION AND GRAVITY SEWER

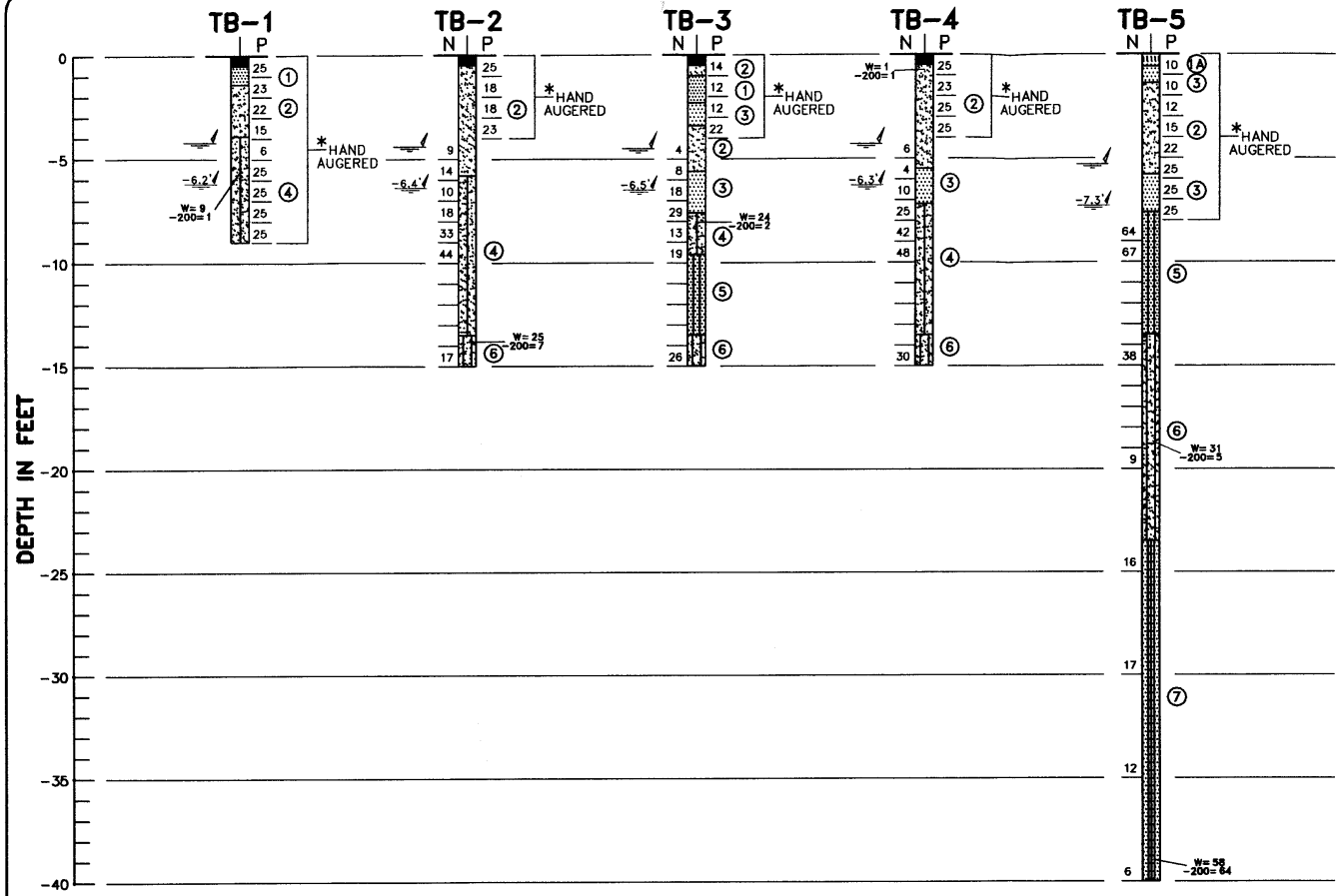
CITY OF TITUSVILLE, FLORIDA

DRAWN : NB	SCALE : NOTED	JOB NO. : 06-E1427.01
APPROVED : DJY	DATE : 01/31/07	FIGURE: 1

LOCPLAN

YOVAISH ENGINEERING SCIENCES, INC.

Consulting Engineers in the Earth Sciences, Geotechnology, Hydrogeology and Construction Materials Testing



LEGEND

- CONCRETE/PAVEMENT
- ① DARK GRAY FINE SAND (SP)
- ①A DARK GRAYISH BROWN FINE SAND WITH PEAT (OC)
- ② LIGHT TO VERY LIGHT GRAY FINE SAND (SP)
- ③ GRAYISH BROWN TO BROWN FINE SAND (SP)
- ④ REDDISH BROWN TO DARK REDDISH BROWN FINE SAND (SP)
- ⑤ DARK REDDISH BROWN SLIGHTLY SILTY FINE SAND (SP-SM)
- ⑥ GRAYISH BROWN SLIGHTLY SILTY FINE SAND (SP-SM)
- ⑦ GRAY TO GREENISH GRAY SILTY TO VERY SILTY FINE SAND WITH SHELLS (SM)
- (SP) UNIFIED SOIL CLASSIFICATION GROUP SYMBOL
- ▽4.2' DEPTH TO GROUNDWATER LEVEL (MEASURED 1/07)
- ESTIMATED SEASONAL HIGH GROUNDWATER LEVEL
- W NATURAL MOISTURE CONTENT IN PERCENT
- -200 PERCENT FINES PASSING U.S. NO. 200 SIEVE
- N STANDARD PENETRATION RESISTANCE VALUE (BLOWS PER FOOT)
- P PENETROMETER PROBE RESISTANCE VALUE

NOTE: * UPPER SOIL PROFILE PERFORMED BY HAND AUGER AND HAND PENETROMETER TESTING IN ORDER TO HELP PREVENT POTENTIAL DAMAGE TO EXISTING UTILITIES

SOIL PROFILES

SUBSOIL & GROUNDWATER LEVEL INVESTIGATION
SEMINOLE (GRACE ST.) LIFT STATION AND GRAVITY SEWER
CITY OF TITUSVILLE, FLORIDA

DRAWN : NB	SCALE : NOTED	JOB NO. : 06-E1427.01
APPROVED : DJY	DATE : 01/31/07	FIGURE: 2

SOIL PROFILES

YOVAISH ENGINEERING SCIENCES, INC.
Consulting Engineers in the Earth Sciences, Geotechnology, Hydrogeology and Construction Materials Testing

	December 23, 2025 **REPLACEMENT OF SEMINOLE LIFT STATION AND DEMOLITION OF BAYVIEW LIFT STATION** **26-B-004LR** **ADDENDUM #3**	*City of Titusville* *Purchasing & Contracting Division* *PO Box 2806 (555 South Washington Avenue)* *Titusville, FL 32781-2806 (32796-3584)*

TO ALL PROSPECTIVE BIDDERS:

This is an Addendum to and should be considered as part of the original bid package for the above-mentioned bid. Please acknowledge receipt of Addendum 3 in the space provided on the Bidder Checklist. Should you have any questions pertaining to this Addendum, please contact Leslie Rothering at 321-567-3973, email Leslie.Rothering@titusville.com.

Clarification to questions:

1) Can another site visit be scheduled for access inside the buildings to be demolished?
   Response: A non-mandatory site visit has been scheduled for 10:00 AM on December 29, 2025, starting at the Bayview Lift Station for viewing only.

2) Spec 024116.1.7.A calls for an engineering survey including hazardous materials information. Is the Contractor required to carry the cost for a 3rd party engineering and testing firm to compile this report?
   Response: The contractor is required to complete the FDEP Notice of Renovation or Demolition Form (DEP Form No. 62-257.900(1)). Means and methods for hazardous materials identification is the responsibility of the contractor. Bids should include all applicable costs for removal of all materials encountered (hazardous and non-hazardous) (i.e. surfacing material, cementitious material, resilient floor covering, asphalt roofing, etc.)

3) Drawing C-2B calls for existing riprap to be removed, stockpiled and re-used. Is the intent to remove all the riprap to place new erosion blankets or just remove what is necessary for the building demo?
   Response: Drawing C-3 depicts the proposed conditions at the Bayview lift station after demolition, which includes changes to the ground surface elevations and the extents of the riprap when compared to the existing conditions that are depicted on Drawing C-2B. The intent of the referenced note is to make use of the existing riprap materials that are located at the Bayview lift station site to the maximum extent possible when establishing the proposed conditions shown on Drawing C-3.

4) Drawing G-1, Note 26 refers to bypass pumping. The condition of the Seminole & Bayview Lift Stations is unknown. Please confirm the contractor is only responsible for bypass pumping the service for these lift stations during tie-ins or other work that disrupts the normal operations and is not responsible for
   Response: The Contractor is responsible for bypass pumping during any activities that interrupt the normal operation of the existing lift stations.

5) Drawing C-6 shows temporary sanitary connection in new MH- (5). Can the existing Seminole Lift Station handle all the Sanitary flow diverted from the abandoned Bayview Lift Station?
   Response: Per specification section 013513.54, the Bayview Lift Station is to remain in service until the new Seminole Lift Station is constructed and has demonstrated acceptable operation for a 30 day period. Contractor can utilize temporary bypass pumping if required to accomplish this work.

6) Drawing E-7, Detail 1 shows the concrete encased duct bank. Drawing E-13 refers to detail H/ED-1 for the concrete encased duct bank which is not shown. Please confirm detail 1 on Drawing E-7 is the correct detail to use, or provide detail H.
Response: An updated Detail H has been attached to this addendum and is to be used for the project.

7) Is the concrete encased duct bank required for the entire length of the run or just below the concrete roadway?
Response: An updated Detail H has been attached to this addendum and is to be used for the entire length. Reinforcing is only required under the roadway.

8) What are the width and depth dimensions for the concrete around the concrete encased conduit?
Response: An updated Detail H has been attached to this addendum and is to be used for the project. The concrete envelope shall be 6" around the conduit.

9) Drawing I-3 shows the antenna installation details for more and less than 20 feet in length. Spec 406650.1.4.B.2.C, lists intent to mount antenna at or around 10 feet in length. Please confirm the Contractor is to use detail D for the antenna installation.
Response: Although it is intended that the Seminole Lift Station antenna be mounted at the lowest possible height, as low as 10 feet AGL, the actual height will need to be determined by the Theoretical Radio Path Study and confirmed by the Final Radio Path Study required by Section 406650. Hence, details are provided to cover the eventuality of a final antenna height below or above 20 feet. Contractor is to use whichever detail applies.

10) Please provide contact info for the firm currently handling radio telemetry work for the City.
Response: The City of Titusville will be providing the integration. The contractor is responsible for all the construction aspects related to the tower, conduits, etc. The contractor will coordinate with the project manager to coordinate the City's SCADA integration team.

11) Drawing E-4 shows the temporary conduit from the existing FPL pole to the lift station to be demolished after project completion. Can the temporary conduit be abandoned and left in place under the roadway?
Response: Yes, the temporary conduit can be abandoned and left in place only under the roadway.

12) Please confirm dewatering discharge can be directed into the Indian River, like the existing drainage pipe outfalls at each lift station.
Response: Refer to Drawing G-1, Note 28 which indicates that the Contractor is solely responsible for the design, installation, permit, and operation of an adequate dewatering system. Therefore, all necessary

regulatory permits, which would include discharge locations, must be obtained by the Contractor with the appropriate regulatory agency.

13) There are approximately 7-8 power poles for overhead electric lines on the east side of Riverside Drive. The power poles are assumed to be approximately 7-10 feet from the new sanitary sewer line. Please confirm, FPL will be responsible for bracing and holding the power poles as needed for excavation of the new sanitary sewer piping and wet well installation.
Response: FPL will be responsible for bracing and holding the power poles as needed for the project work. The project Bid Form will be updated to include an FPL project contingency of $75,000 for all direct FPL costs including bracing, temporary, and new power service.

14) If the Contractor is responsible for bracing and/or holding the power poles, please include an FPL Contingency line item on the pricing schedule with a specified allowance.
Response: FPL will be responsible for bracing and holding the power poles as needed for the project work. The project Bid Form will be updated to include an FPL project contingency of $75,000 for all direct FPL costs including bracing, temporary and new power service.

15) Spec 033010.2.2.A calls for a delegated engineer. Please clarify and list which concrete items require a delegated engineer, e.g; generator slab, retaining wall, antenna foundation, signage footer, lift station driveway, electric equipment rack, hose bib assembly, above ground force main slab.
Response: Referenced specification section requires delegate engineer for design of concrete formwork. At a minimum, retaining wall shall be placed with forms. Other listed items are not typically placed with forms, however, Contractor shall determine if other concrete placements require forms or will be placed by other means.

16) The plans and specs include several references to the City of Titusville standards. We have been unable to locate the standards. Please provide the standards or a link to them.
Response: Standards are attached to this addendum.

17) ***Bid item 9*** for 10" gravity sewer calls for qty of 30 ft but the plans only call for 13ft between the existing south end MH to MH-(1). Please advise.
Response: The bid form has been updated to reflect 13 feet.

18) ***Bid Item 15*** Does this line item need to include all subbase materials
Response: Bid Item 15 is for all work that is associated with replacement of the pavement on Riverside Drive depicted on Sheet C-14, including, but not limited to, removal of the existing concrete street and preparation of the stabilized subgrade and base.

19) ***Bid item 19*** asks for the pumps as a per each price. The pump supplier prices all the items: pumps, bases, rails, brackets, hatch & control panel as a lump sum quote to the contractor. Can this bid tab line item be changed to: Pumps & Panel package / QTY of 1 / Lump Sum instead?
Response: Bid Item 19 is for individual pumps. All other appurtenances are to be provided in Bid Item 18. Electrical items are to be provided in Bid Item 47.

20) ***Bid item 21*** has pipe spools & fittings together, then it is asking for this to be priced in a pipe length of 35LF. The per ft price will be way out of proportion based on these being combined. Can this bid tab line be changed to: 8" Above grade pipe & fittings / QTY of 1 / Lump Sum instead?
Response: Yes. See revised Bid Form.

21) ***Bid item 27*** Is for an 8" gate valve. The only gate valve I see on the plans is the tapping valve. This valve is also included in line item 28 with the tapping sleeve. Please confirm if this line item will be removed from the bid tab.
Response: This item will not be removed from the bid tab.

22) ***Bid item 32*** Is this is a duplicate of the line item on Bid item 28.
Response: This Bid Item has been removed.

23) ***Bid item 33*** I count (3) ARV's on the plans but bid tab shows qty of 2.
Response: The Bid Form has been updated to show 3 Air Release Valves.

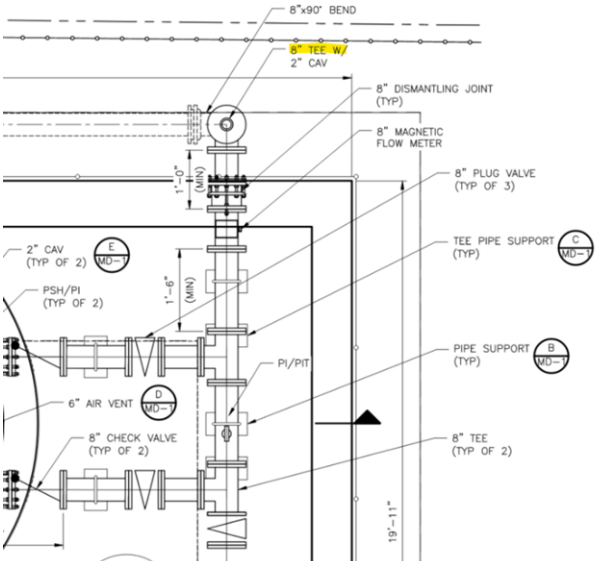
24) ***Bid item34*** I do not see any pressure regulation valves on the plans.
Response: The Bid Form has been updated to remove Pressure Regulation Valves.

25) ***Bid item 42*** The qty & unit are swapped around into the wrong column.
Response: The Bid Form has been updated.

26) ***Bid item 43*** The qty & unit are swapped around into the wrong column.
Response: The Bid Form has been updated.

27) Detail B on sheet C-4 is for the concrete pavement section. This shows 6" of LBR-100 material and 12" of LBR-40 material. Would the city accept 12" of LBR-100 material as an alternate to 6" of LBR-100 and 12" of LBR-40? This substitution is in line with the FDOT structural numbers.
Response: In accordance with FDOT 160-2.4 Granular Subbase Substitution, the substitution of 6 inches of granular subbase meeting the requirements of FDOT 290-2 and 290-3 is acceptable in lieu of 12" Type B LBR-40 stabilized subgrade. In the event of a substitution, the Contractor is still responsible for meeting all other material and compaction requirements.

28) **Bid Item 24** is for an 8-Inch DIP Tee. It is assumed that this is an MJ Tee on the Buried FM, but I could not locate it on the plans. The Flange Tees for the Lift Station are assumed to be part of and included in Bid item 21.
Response: Bid Item 24 is for the 8" DIP TEE which is highlighted in the snip below which is on Drawing M-1:



29) **Bid Items 28 and 32** are both for a single 8-inch Tapping Sleeve and Valve. On the plans, I could only find one wet tap, the 10x8 for the Force Main connection. Which bid item would that go in and then could you tell me what the other bid item is form.
Response: Bid Item 32 has been removed from the Bid Form. Bid Item 28 remains.

30) **Bid item 34** is for a Pressure Regulating Valve, could you tell me where this is located on the plans?
Response: Bid Item 34 has been removed from the Bid Form.

31) Who will be responsible for integrating the lift station upgrades/changes to the city's computer system?
Response: The contractor will coordinate with the project manager to coordinate the City's SCADA integration team.

The ITB opening due date and times remains January 7, 2026 @ 3:00 p.m.

Sincerely,
Leslie Rothering
Purchasing and Contracts

REVISED SCHEDULE OF BID FORM FOR

Replacement of Seminole Lift Station & Demolition of Bayview Lift Station

Bid #26B004 LR – Per Addendum 3

BASE BID ITEMS					
Item No.	**Description**	**No. of Units**	**Units**	**Unit Price**	**Subtotal**
GENERAL					
1	Bonds and Insurance	1	LS	$	$
2	Indemnification	1	LS	$	$
3	Mobilization and Demobilization (Not greater than 2.5% of Base Bid)	1	LS	$	$
4	Maintenance of Traffic	1	LS	$	$
5	Erosion and Sedimentation Control	1	LS	$	$
CIVIL					
	Gravity Sewer				
6	12-inch PVC Gravity Sewer Piping 0-8 Feet Deep	360	LF	$	$
7	12-inch PVC Gravity Sewer Piping 8-10 Feet Deep	580	LF	$	$
8	12-inch PVC Gravity Sewer Piping 10-12 Feet Deep	290	LF	$	$
9	10-inch PVC Gravity Sewer Piping	13	LF	$	$
10	12-inch DR-18 Gravity Sewer Piping	20	LF	$	$
11	Sewer Manhole 7 Feet Deep	1	EA	$	$
12	Sewer Manhole 9 Feet Deep	2	EA	$	$
13	Sewer Manhole 10.5 Feet Deep	1	EA	$	$
14	Sewer Manhole 11.5 Feet Deep	2	EA	$	$
15	Pavement	3,050	SY	$	$
	Bayview Lift Station				
16	Demolition of Bayview Lift Station	1	LS	$	$
	Seminole Lift Station				
17	Construct Precast Wet Well	1	LS	$	$
18	Construct Lift Station and All Associated Appurtenances	1	LS	$	$
19	Submersible Pump	2	EA	$	$
20	8-inch DIP Force Main (wet well)	42	LF	$	$
21	8-inch DIP Force Main and Fittings (above ground)	1	LF	$	$
22	8-inch Magnetic Flow Meter	1	EA	$	$
23	8-inch DIP Force Main (buried RJ)	50	LF	$	$
24	8-inch DIP Tee	1	EA	$	$
25	8-inch DIP 90 degree bend (buried RJ)	3	EA	$	$
26	8-inch DIP 45 degree bend (buried RJ)	1	EA	$	$
27	8-inch Gate Valve	1	EA	$	$

28	8-inch Tapping Sleeve and Valve	1	EA	$	$
29	8-inch DIP Emergency Pump-out Connection	1	LS	$	$
30	8-inch Plug Valve	3	EA	$	$
31	8-inch Check Valve	2	EA	$	$
~~**32**~~	~~8 inch Tapping Sleeve and Valve~~	~~1~~	~~EA~~	~~$~~	~~$~~
33	Air Release Valve	3	EA	$	$
~~**34**~~	~~Pressure Regulating Valve~~	~~2~~	~~EA~~	~~$~~	~~$~~
35	Pipe Support	10	EA	$	$
36	Fence	200	LF	$	$
37	Gate	1	EA	$	$
38	Concrete Driveway, Walkways, Pads	100	SY	$	$
39	Generator Pad	14	CY	$	$
40	Retaining Walls	1	LS	$	$
41	Bollards	2	EA	$	$
42	Guardrail	26	LF	$	$
43	Sod	7300	SF	$	$
44	Relocate Water Service, Backflow, and Hose Bib	1	LS	$	$
45	Restore Curb and Gutter	20	LF	$	$
46	Demolition of Seminole Lift Station	1	LS	$	$
ELECTRICAL					
47	Construct Electrical Equipment	1	LS	$	$
48	Standby Generator	1	LS	$	$
49	FPL Allowance	1	NA	$75,000	$75,000
TOTAL BID PRICE					**$ -**

Bidder proposes to do the Work for the above Bid for (words)

_____

_____ **($) .**

THE ABOVE BID QUANTITIES ARE THE CITY'S ESTIMATED REQUIREMENTS AND WILL BE USED SOLELY FOR BID EVALUATION AND CONTRACT AWARD PURPOSES. THESE QUANTITIES DO NOT CONSTITUTE A GUARANTEE OF WORK OR INTENT THEREOF. THE CITY DOES NOT REPRESENT THAT THE ACTUAL QUANTITIES OF WORK PERFORMED WILL CORRESPOND WITH THE ABOVE BID QUANTITIES. FURTHERMORE, THE CONTRACTOR SHALL NOT PLEAD MISUNDERSTANDING OR DECEPTION BECAUSE OF QUANTITIES OR OF THE CHARACTER, LOCATION OR OTHER CONDITIONS PERTAINING TO THE WORK.

CONTRACTOR AGREES THAT PAYMENTS, FOR SATISFACTORY WORK PERFORMED, WILL BE BASED ON THE ACTUAL QUANTITIES OF WORK INSTALLED, AND THE ACTUAL QUANTITIES MAY BE GREATER THAN OR LESS THAN THE ABOVE BID QUANTITIES.

CONTRACTOR'S BID PRICES SHALL INCLUDE ALL SUPERVISION, LABOR, MATERIALS, EQUIPMENT, TOOLS, TRANSPORTATION, ADMINISTRATION, OVERHEAD AND PROFIT, AND ANY OTHER INCIDENTALS REQUIRED TO COMPLETE THE WORK TO THE CITY'S SATISFACTION AND READY FOR USE. NO SEPARATE PAYMENT WILL BE MADE FOR ANY OTHER ITEMS, REQUIRED TO BE

PERFORMED BY THE CONTRACTOR TO COMPLETE THE WORK, WHICH ARE NOT CONTAINED IN THE ABOVE BID SCHEDULE. ACCORDINGLY, THE CONTRACTOR MUST INCLUDE ALL THE COSTS, FOR THE WORK AND THE SERVICES REQUIRED TO BE PERFORMED OR PROVIDED BY THE CONTRACTOR, IN THE CONTRACTOR'S BID PRICES FOR THE PAY ITEMS CONTAINED ABOVE.

THE FOLLOWING ITEMS AND THE COST OF SUCH WORK ARE SOME EXAMPLES OF WORK FOR WHICH NO PAY ITEMS HAVE BEEN ESTABLISHED AND CONSEQUENTLY THE CONTRACTOR MUST INCLUDE SUCH COSTS IN THE ABOVE BID ITEMS:

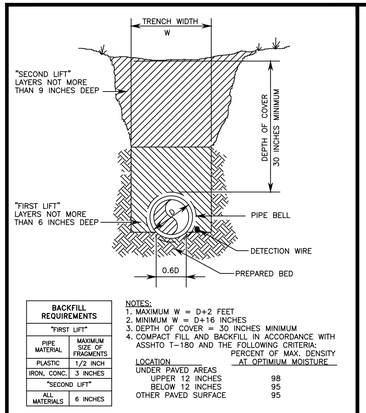
1. Maintaining and supporting existing above ground and below ground utility structures,
2. All other General Conditions including insurance, bonding, providing proper safety and sanitary facilities for workers, etc.
3. Any other required work or service not included in the Schedule of Bid Items.

The City reserves the right to award the contract to either the firm that submits the lowest "Bid Total Price" or the firm that submits the lowest bid price resulting from adding unit prices, provided that said bid is both responsive and responsible.

COMPANY NAME AND ADDRESS:	PHONE #_____ FAX #_____ E-MAIL: _____ FEIN #_____ DUNS# _____ SAMS #_____
AUTHORIZED SIGNATURE: _____ PRINTED SIGNATURE: _____ TITLE: _____	
DATE SIGNED:	

BID SECURITY

Accompanying this Proposal is a five percent (5%) **(circle one)** Certified Check, Bid Bond, Cashier's Check in the amount of Dollars ($_____) as bid security.



BACKFILL REQUIREMENTS	
"FIRST LIFT"	
PIPE MATERIAL	MAXIMUM SIZE OF FRAGMENTS
PLASTIC	1/2 INCH
IRON, CONC.	3 INCHES
"SECOND LIFT"	
ALL MATERIALS	6 INCHES

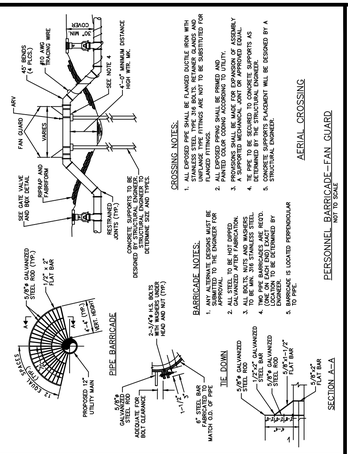
NOTES:
1. MAXIMUM W = D+2 FEET
2. MINIMUM W = D+16 INCHES
3. DEPTH OF COVER = 30 INCHES MINIMUM
4. COMPACT FILL AND BACKFILL IN ACCORDANCE WITH ASSHTO T-180 AND THE FOLLOWING CRITERIA:

LOCATION	PERCENT OF MAX. DENSITY AT OPTIMUM MOISTURE
UNDER PAVED AREAS	
UPPER 12 INCHES	98
BELOW 12 INCHES	95
OTHER PAVED SURFACE	95

TYPICAL
TRENCH DETAIL

DEPARTMENT OF WATER RESOURCES
DATE: 05/22 EXHIBIT NO. C1
SCALE: NTS SHT. 1 OF 1

CITY OF TITUSVILLE, FLORIDA



AERIAL CROSSING DETAIL

DEPARTMENT OF WATER RESOURCES
DATE: 05/22 EXHIBIT NO. C2
SCALE: NTS SHT. 1 OF 1

CITY OF TITUSVILLE, FLORIDA

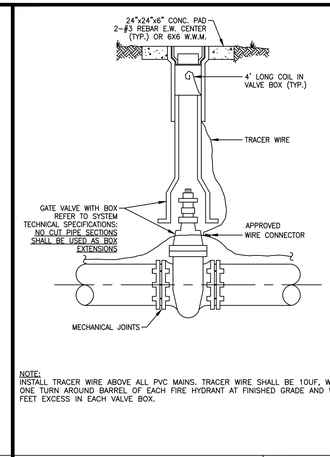
POLYVINYL CHLORIDE (PVC) & POLY-WRAPPED DUCTILE IRON (DIP) PIPE RESTRAINED JOINT LENGTH (FT)					
PIPE DIAMETER (Inches)	TEE BRANCH (Size on Size)	22 1/2° BEND	45° BEND	90° BEND	DEAD END
4	54	4	8	20	58
6	85	6	12	27	82
8	118	7	15	35	107
10	146	9	18	42	128
12	176	10	21	49	151
14	203	11	23	55	171
16	231	13	26	62	193
18	258	14	28	67	213
20	285	15	31	73	234

NOTES:
1. THE TABLE INDICATES MINIMUM LENGTHS OF RESTRAINED JOINTS ON EACH SIDE OF FITTINGS AND CHANGES IN DIRECTION. WHERE PRACTICAL, FULL LENGTHS OF RESTRAINED PIPE SHALL BE LAID TO ACHIEVE THE REQUIRED MINIMUM RESTRAINT.
2. WHERE COMBINATIONS OF FITTINGS ARE USED, THE PIPING BETWEEN THE FITTINGS SHALL BE RESTRAINED. THE MINIMUM RESTRAINED LENGTH OF PIPE REQUIRED UPSTREAM AND DOWNSTREAM OF THE COMBINATION OF FITTINGS SHALL BE DETERMINED ON THE BASIS OF ONE EQUIVALENT FITTING (i.e., TWO 45° BENDS WILL BE CONSIDERED AS THOUGH A 90° BEND WERE LOCATED MIDWAY BETWEEN THE TWO 45° BENDS.)
3. 11 1/4° BENDS SHALL BE RESTRAINED THE SAME AS THAT SHOWN FOR 22 1/2° BENDS.
4. RESTRAINED JOINT LENGTHS NOTED ARE BASED ON THE TEST PRESSURE, SILTY SANDS (SM), 3-FEET DEPTH, LAYING CONDITION NO. 5 & TEE SIZE ON SIZE.
5. IN-LINE VALVES: IF THE STRAIGHT RUN OF PIPE ON BOTH SIDES OF THE VALVE EXCEEDS THE LENGTH REQUIRED FOR "DEAD ENDS", THEN NO RESTRAINED JOINTS ARE NECESSARY.

TYPICAL HORIZONTAL MECHANICAL
THRUST RESTRAINT

DEPARTMENT OF WATER RESOURCES
DATE: 01/19 EXHIBIT NO. C3
SCALE: NTS SHT. 1 OF 1

CITY OF TITUSVILLE, FLORIDA

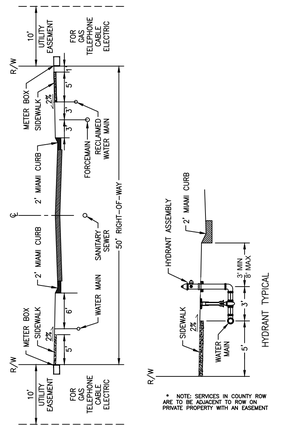


NOTE:
INSTALL TRACER WIRE ABOVE ALL PVC MAINS. TRACER WIRE SHALL BE 10UF, WITH ONE TURN AROUND BARREL OF EACH FIRE HYDRANT AT FINISHED GRADE AND WITH 4 FEET EXCESS IN EACH VALVE BOX.

TYPICAL GATE VALVE
INSTALLATION

DEPARTMENT OF WATER RESOURCES
DATE: 05/22 EXHIBIT NO. C4
SCALE: NTS SHT. 1 OF 1

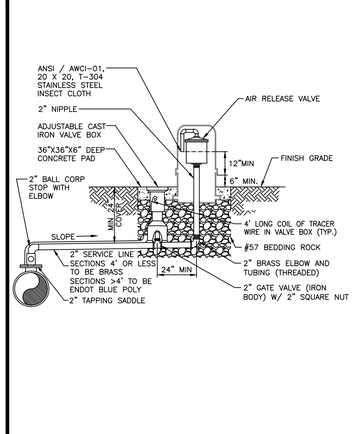
CITY OF TITUSVILLE, FLORIDA



UTILITY PLACEMENT WITHIN A 50'
PUBLIC ROAD RIGHT-OF-WAY

DEPARTMENT OF WATER RESOURCES
DATE: 01/19 EXHIBIT NO. C5
SCALE: NTS SHT. 1 OF 1

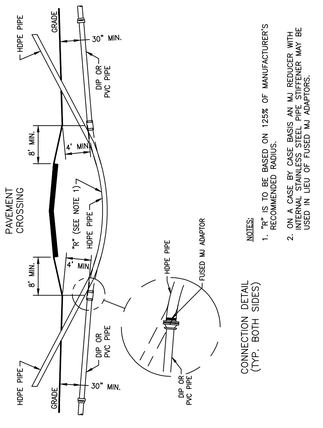
CITY OF TITUSVILLE, FLORIDA



ABOVE GROUND AIR
RELEASE VALVE DETAIL

DEPARTMENT OF WATER RESOURCES
DATE: 01/19 EXHIBIT NO. C6
SCALE: NTS SHT. 1 OF 1

CITY OF TITUSVILLE, FLORIDA



NOTES
1. "α" IS TO BE BASED ON 125% OF MANUFACTURER'S RECOMMENDED RADIUS.
2. ON LONG RADIUS CASE BENDS ON MJ REDUCER WITH HDPE PIPE, A SHORT STIFFENER MAY BE USED IN LIEU OF FUSED MJ ADAPTORS.

TYPICAL CITY DIRECTIONAL BORE
CONFLICT RESOLUSION

DEPARTMENT OF WATER RESOURCES
DATE: 01/19 EXHIBIT NO. C7
SCALE: NTS SHT. 1 OF 1

CITY OF TITUSVILLE, FLORIDA

LOCATION OF PUBLIC WATER SYSTEM MAINS IN ACCORDANCE WITH F.A.C. RULE 62-555.314

	Joint Spacing @ Crossings (Full Joint Centered)	Crossings (1)	Horizontal Separation	Other Pipe
Storm Sewer, Stormwater Force Main, Reclaimed Water (3)	Alternate 3 ft. minimum	Water Main 12 inches is the minimum, 16 inches preferred, 6 inches is the minimum and 12 inches is preferred	Water Main 3 ft. minimum	
Vacuum Sanitary Sewer.	Alternate 3 ft. minimum	Water Main 12 inches preferred 6 inches minimum	Water Main 10 ft. preferred 3 ft. minimum (3)	
Gravity or Pressure Sanitary Sewer, Sanitary Sewer Force Main, Reclaimed Water (4)	Alternate 6 ft. minimum	Water Main 12 inches is the minimum, 16 inches preferred, 6 inches is the minimum and 12 inches is preferred	Water Main 10 ft. preferred 6 ft. minimum (3)	—
On-Site Sewage Treatment & Disposal System	—	—	10 ft. minimum	—

(1) Water Main crossing sewer, storm pipe, Water Main shall be below other pipe, the minimum separation is 12 inches.
(2) Reclaimed water regulated under Part III of Chapter 62-610, F.A.C.
(3) 3 ft. for gravity sanitary sewer where the bottom of the water main is laid at least 6 inches above the top of the gravity sanitary sewer.
(4) Sanitary sewer force main shall be designed to withstand a minimum of 150 psi.
Disclaimer – The document is provided for your convenience only. Please refer to F.A.C. Rule 62-555.314 for additional construction requirements.

UTILITY SEPARATION DETAIL

DEPARTMENT OF WATER RESOURCES
DATE: 01/19 EXHIBIT NO. C7
SCALE: NTS SHT. 1 OF 1

CITY OF TITUSVILLE, FLORIDA

City of Titusville
555 South Washington Avenue
Titusville, Florida 32796
PH: (321) 383-5823 Fax: (321) 383-5700

CITY OF TITUSVILLE STANDARD DISCLAIMER FOR SPECIFICATIONS AND DETAIL DRAWINGS

The City of Titusville provides these drawing details and specifications for informational purposes only and makes no claims as to their suitability for use for any purposes.

USE OF THESE DETAILS AND SPECIFICATIONS (INCLUDING DESIGN AND DIMENSIONS) MUST BE CHECKED BY THE USER'S ENGINEER ENSURING ADEQUACY FOR THE INTENDED USE.

REVISIONS OR ADDITIONS TO THESE DETAILS AND/OR SPECIFICATIONS SHALL BE ISSUED PERIODICALLY AND IT SHALL BE THE RESPONSIBILITY OF THE USER OF THESE DETAILS AND SPECIFICATIONS TO KEEP CURRENT WITH ANY UPDATES.

The City of Titusville is not responsible for direct, indirect, incidental or consequential damages resulting from the use of any information provided herein.

Changes to any City of Titusville detail or specification is expressly prohibited without the written approval from the City of Titusville. Any authorized change must be clearly identified with a revision cloud noting revision dates. Any authorized revision must be accompanied by a revision approval letter by the City of Titusville.

Any detail that is not required for the specific development that these details have been included in the permit set maybe crossed out on this drawing sheet but may not be removed. No additional detail and or specification may be added to this drawing sheet.

No.	Revision	Date
	AS, WILL, KM, TLO,	12-31-19
	AS	5-9-2022

UTILITIES COMMON DETAILS

WATER RESOURCES DEPT.	1 of 2 SHEET
May 2022 DATE	
N.T.S. SCALE	

1.0 GENERAL

1.1. These specifications cover the design, review of plans, and specifications for water main extensions, sanitary sewage collection systems, sewage transmission force mains, sewer line extensions, reclaimed water distribution systems, and all appurtenant items, which are to be owned and maintained by the City of Titusville. In these specifications "COT" will refer to the Water Resources Department.

1.2. All improvements and modifications made to the Titusville Municipal Water System, Titusville Municipal Sewage Collection and Transmission System, and/or Titusville Reclaimed Water System shall be completed in accordance with the City approved site plans. Material and workmanship shall conform to the specifications that appear in this document as well as the approved drawings. No deviations from the approved specifications and drawings are permitted except for minor field changes in location and/or materials approved and documented in the field by the City Utility Inspector. Any significant change must be approved by the Water Resources Department. Any change made without prior approval is subject to rejection. If a situation arises where the plans and specifications are in conflict, the more restrictive requirement shall prevail.

1.3. The Contractor shall not remove any thrust block or mechanical restraint connected to any water mains or any sewage transmission force mains or operate water control valves, except under the direction and observation of the City Utility Inspector. NO WORK SHALL COMMENCE UNTIL THE CITY HAS BEEN NOTIFIED AT LEAST 48 HOURS IN ADVANCE.

1.4. **Unless otherwise noted or approved by the City of Titusville (COT), all materials shall be manufactured in the United States.**

1.5. An Underground Utility Contractor licensed in the State of Florida shall perform all underground utility work.

1.6. Approved product list takes precedence over Technical Specifications.

2.0 GENERAL PLANS PREPARATION

2.1. All water distribution systems, extensions, sanitary sewer (gravity), sewage transmission systems, reclaimed water distribution systems, reclaimed water extensions and appurtenant items, shall be designed in accordance with the applicable regulations of the City of Titusville, the Florida Department of Environmental Protection (FDEP), and the standards established herein. In addition, all distribution systems, transmission mains and system improvements shall be designed and constructed for a serviceable life of not less than 50 years.

2.2. LOCATION: Mains shall be located within dedicated rights-of-way or utility easements. The City reserve rights to prescribe and approve the route of a proposed utility extension so it is consistent with regional public utility master planning conventions.

2.3. Mains shall extend at least ten (10) feet beyond the farthest point of ingress/egress to a subdivision, property site, or to property limits.

2.4. Easements: If piping is to be constructed within an easement, the centerline of the pipe shall be located within two (2) feet of the centerline of the easement. Mains and easements shall not be placed under buildings, retention ponds, courts, swimming pools, fountains or other structures. Placement of mains under pavement shall be kept to a minimum. Placement of mains along interior side or rear lot lines or stormwater retention pond berms are not approved. Exceptions may be allowed on a case-by-case basis if such configuration results in efficient placement and utilization of the system as determined by the Water Resources Department. Services, air release valves, and other valves shall not be placed along interior side or rear lot lines or stormwater retention pond berms. Additional easement widths may be required on a case-by-case basis.

2.5. Foundations: All mains up to eight (8) inches in size shall be located at least ten (10) feet from any building foundation, or as determined by the City. Mains greater than eight (8) inches shall be located at least fifteen (15) feet from any building foundation, or as determined by the City.

2.6. REVIEW AND PERMIT STANDARDS

2.6.1. GENERAL: For all developments (subdivisions, condominiums, townhouses, etc.), the Developer shall comply with the City's Land Development Regulations.

2.6.2. All drawings must include a location map referencing established landmarks to establish clearly the project location.

2.6.3. FDEP PERMITTING: The developer shall submit per the latest FDEP submittal requirements including but not limited to:

2.6.3.1. Two (2) signed and sealed sketches of plans, calculations and specifications.

2.6.3.2. Two (2) executed Florida Department of Environmental Protection (FDEP) permit applications.

2.6.3.3. Appropriate filing fees.

2.6.4. All utility work, connections, etc. performed in the Brevard County right-of-way must have an approved utility right-of-way permit from that agency prior to start of any utility work in the right-of-way.

2.6.5. All utility work, connections, etc. performed in the Florida Department of Transportation (FDOT) right-of-way must have an approved utility right-of-way permit from that agency prior to start of any utility work in the right-of-way.

2.6.6. A Site Permit will be obtained prior to any work, extension, repair, rehabilitation or modification of any main owned and maintained by the City of Titusville.

2.6.7. No changes to the City approved plans and specifications shall be made without the express written approval of the Water Resources Department.

2.6.8. For all development related submittals to the City, a developer planning a utility extension needs to include an engineering assessment of the hydraulic impact upon the existing City utility network, based on accepted master planning and engineering conventions.

3.0. GENERAL DESIGN AND CONSTRUCTION STANDARDS

3.1. VALVES: All valves will meet or exceed all requirements of AWWA C509 and/or C515 Standards, latest revision. All valves shall be resilient wedge gate valves with stainless steel (SS) stems and hardware. All valves larger than 12 inches, with the exception of tapping valves, shall have bevel gears with side actuators.

3.2. TEST AND INSPECTION

3.2.1. Laboratory or Plant test: Pipe and materials shall be tested in accordance, and for conformity, with the latest editions of the following:

ITEM	SPECIFICATIONS
Ductile Iron Fittings	ANSI 121.10 (AWWA C111)
Ductile Iron Pipe	ANSI A21.51 (AWWA C151)
Polyethylene Encasement Polyvinyl Chloride (PVC)	ANSI A21.5 (AWWA C105)
Pipe 4" & Larger	AWWA C900/DR 18 or C905/DR 18
High Density Polyethylene (HDPE) Pipe 4" – 60"	AWWA C906/Min. Pressure Class 160
Copper Pipe 1" – 2"	Type "K" soft copper
EndoTrace 2" Polyethylene	AWWA C901/SDR 9
Gate Valves 2" & larger	Resilient seated AWWA C509/C515

All pieces and parts are to be domestic unless otherwise noted.

3.2.2. Upon request, the Contractor shall submit to the City, a certificate of inspection stating that the materials furnished have been inspected at the plant, meet the requirements of these specifications, and that the pipe is marked in accordance with Section 3.19.

3.2.3. The entire product of any manufacturer may be rejected when, in the opinion of the City, the methods of manufacture fail to secure uniform results acceptable to the requirements of these specifications.

3.2.4. All pipe, valves and fittings shall be subject to inspection at time of delivery and in the field just prior to installation. All pipe, valves or fittings, which, in the opinion of the City, do not conform to these specifications, will be rejected and shall be removed by the Contractor at their expense.

3.2.5. HYDROSTATIC AND LEAKAGE TESTING:

3.2.5.1. All pipe installed for the purpose of conveying under pressure shall be tested after installation in accordance with the applicable portions of the hydrostatic tests as set forth in the latest revision of Section 5 of AWWA Standard C600 for ductile iron mains and Section 7.3 of AWWA Standard C605 for PVC mains, with leakage limited to that shown in equation below.

$L = (SDP^{0.5})Y/148{,}000$

L=Testing allowance in gallons per hour
S= Length of line being tested in feet
D= Nominal Internal diameter in inches
P= Average test pressure in pounds per square inch (gauge)

Force mains are tested at 100 psi for 2 hours. All other pipes are tested at 150 psi for 2 hours.

3.2.5.2. The maximum length of water main to be pressure tested shall be limited to 2,000 linear feet of main, sectioned by control valves in the closed position. More than one section may be tested simultaneously. All service lines and appurtenances shall be tested.

3.2.5.3. All lines shall be tested to the required test pressure for two (2) hours duration. The Contractor shall furnish all necessary pumps, gauges, and appurtenance.

3.2.5.4. Contractors are required to pressure test all lines prior to scheduling the verification test witnessed by the City Utility Inspector. If the verification test fails with the City Utility Inspector, (present), the Contractor shall be required to pay a retest fee, prior to the scheduling of a retest.

3.3. SEPARATION OF WATER AND SEWER LINES

3.4. DESIGN: The proximity of sewer lines and water mains (including appurtenances) and the type of material used for each system are important design considerations for minimizing the chance of contaminants entering the water distribution system. Refer to AWWA, Prevention of Groundwater and Sewer Backflow into Distribution Systems.

3.5 Refer to Appendix B with Table titled "Location of Public Water System Mains in Accordance with FAC 62-555.314".

3.6 At the utility crossings described above, one full length of water main pipe shall be centered above or below the other pipeline so the water main joints will be as far as possible from the other pipeline. Alternatively, at such crossings, the pipes shall be arranged so that all water main joints are at least three (3) feet from all joints in storm sewers, stormwater force mains, or pipelines conveying reclaimed water regulated under Part III of Chapter 62-610, F.A.C., and at least six (6) feet from all joints in gravity- or pressure-type sanitary sewers, wastewater force mains, or pipelines conveying reclaimed water not regulated under Part III of Chapter 62-610, F.A.C. For visual representation, see Table titled "Location of Public Water System Mains in Accordance with FAC Rule 62-555.314" in Appendix B.

3.7. HOUSE SEWER LATERALS: The above requirements shall apply to house sewer laterals that cross above a water line, but not to those laterals that cross at least six (6) inches below a water line.

3.8. WATER SERVICE LINES: Water services with an inside diameter of 3 inches or greater shall be separated in accordance with the above guidelines for water mains and sewer mains. The minimum separation shall be maintained and in no case shall they be laid in the same trench.

3.9. RECLAIMED WATER SERVICE LINES: Reclaimed water services and sewer lines shall be separated in accordance with the above guidelines. The minimum separation shall be maintained and in no case shall they be laid in the same trench.

3.10. PIPE INSTALLATION

3.11. TRENCH EXCAVATION

3.11.1 Make all excavations by open cut with banks of trenches at no greater than the maximum allowable slope as defined in OSHA 1926, Subpart P. Sheeting and shoring, if required for depth of trench, will conform to OSHA safety standards. A trenching box or shield may be used in place of sheeting and shoring. Make trenches wide enough to allow approximately eight (8) inches clearance on each side of the main; bottom uniform to provide accurate and uniform bearing for as nearly the full length of pipe section as practical. Excavate bell holes after trench has been graded. Perform all excavations of whatever substance encountered to the depths shown or indicated on plans. In the event unsuitable or unstable soil is encountered, such as refuse or organic matter, it shall be removed and replaced with approved material in six-inch compacted layers at a depth of twelve (12) inches below main. All excavated material shall be piled in a proper manner that will not obstruct sidewalks, roads or driveways. Fire hydrants, valve boxes and other utility controls shall be left unobstructed and accessible until work is completed. Street drainage shall not be obstructed.

3.11.2. The Contractor shall furnish all equipment and labor necessary to remove storm or subsurface waters from excavation areas to maintain the excavations free of water while construction is in progress. The dewatering of any excavation areas and the disposal of the water shall be in strict accordance with the latest revision of all local and state government rules, regulations and permits. The Contractor is responsible for obtaining any dewatering permits required from St. Johns River Water Management District. The Contractor shall utilize suitable equipment to dewater adequately the excavation so that it will be dry for work and pipe laying. A wellpoint system, or other dewatering method approved by the respective jurisdictional agencies, shall be utilized if necessary to maintain the excavation in a dry condition for preparation of the trench bottom and for pipe laying. Discharge to storm sewers, canals, streams, or wetlands is only allowable if specifically allowed for in the Dewatering Permit. In no case shall discharge result in turbidity reaching wetlands or any waterways. Construct temporary culverts, barricades and other protective measures to prevent damage to property or injury to any person or persons. Flooding of streets, roadways, driveways or private property will not be permitted. Engines driving dewatering pumps shall be equipped with residential type buffers. Additional soundproofing may include, but not limited to, silent packs or plywood encasements.

3.12. HANDLING AND CUTTING PIPE: Every care shall be taken in handling and laying pipe and fittings to avoid damaging the pipe, scratching or marring machined surfaces, and abrasion of the pipe coating. Any fitting showing a crack and any fitting or pipe which has received a severe blow that may have caused a fracture (even though no such fracture can be seen), shall be marked as rejected and removed at once from the work site. All repaired or replaced sections shall be joined by M.J. gasket fittings only.

3.13. PIPE LAYING

3.13.1. Mains shall be constructed of the materials specified and as shown on the approved drawings. Each section of the pipe shall rest upon the pipe bed for the full length of the barrel, with recesses excavated to accommodate bells and joints. Any pipe that has its grade or joint disturbed after placement shall be taken up and re-laid. No pipe shall be laid when the trench conditions or the weather is unsuitable for such work, except by permission of the Water Resources Department. Any section of pipe already laid which is found to be defective or damaged shall be replaced with new pipe without additional cost to the City. Excavation,trenching and backfilling shall be in accordance with the requirements of the applicable portions of these specifications. All iron pipe and fittings shall be laid in accordance with AWWA Standard C600.

3.13.2. The minimum cover over all pressure piping shall be thirty (30) inches except where specifically shown as otherwise approved by the Water Resources Department. The maximum depth of cover shall not exceed forty-eight (48) inches except where specifically shown as otherwise approved by the Water Resources Department.

3.13.3. A conscientious effort shall be made to keep the inside of the pipeline being installed as clean as possible. Before pipe is laid, all dirt and foreign materials shall be removed from the inside of the bell and from the outside spigot end.

3.13.4. During times when pipe laying is not in progress, all open pipe ends or fittings shall be closed by a water tight cap or plug, or other approved method. This requirement will pertain to any time during the working day that trench pipe laying is not in progress, including overnight or weekends. When water is present in the trench, the pipe seal shall remain in place until the trench is pumped completely dry.

3.13.5. After pipe is laid, care shall be taken to avoid the entrance of dirt or water into the trench by the use of tight bulkheads.

3.13.6. To provide the capability for routing the pipe to suit unusual laying conditions, around obstacles, and moderate changes in grade, all gasket slip joint pipe connections shall have a joint deflection of no more than 75% of the manufacturer's recommendations.

3.14. JOINT RESTRAINT: Suitable mechanical joint (MJ) restraint shall be applied on all pressure pipelines (except for those having screwed or flange joints), all tees, plugs, caps and at bends deflecting 11-1/4 degrees or more. All mechanical joint restraints will be left uncovered for inspection before backfilling. If MJ restraints are backfilled prior to inspection, the City Utility Inspector, may request re-excavation for verification of construction methods.

3.15. STREET CROSSINGS

3.15.1. Mains crossing paved roadways shall use horizontal directional drilling, as per City of Titusville requirement, where open trenching is not permitted.

3.15.2. FDOT or Brevard county right-of-way permits may be required prior to starting street crossing construction. It is the Project Engineer's responsibility to obtain the necessary permits for road crossings, horizontal directional drilling, or open cutting.

3.15.3. The Contractor shall be responsible for locating and verifying existing underground utilities, services, and structures in advance of construction. The Contractor shall conduct exploratory excavations in areas of potential conflict or connection. The directional drill operation shall be done sequentially and continuously for one machine setup. Correct line and grade shall be carefully maintained. Add-on sections shall be sealed together to provide watertight total pipe strength joints. The installation shall produce no upheaval, settlement, cracking, movement or distortion of the existing or proposed roadbed or other facility. The maximum pull back (reamer) shall not be greater than two (2) inches greater than the pipe outside diameter to be installed. A minimum of thirty (30) inches of cover is required for all water service lines under roads. Required push/pull pits or shafts shall be excavated and maintained to a minimum dimension. The excavation shall be adequately barricaded, sheeted, braced, and dewatered as required, in accordance with applicable sections of these specifications.

3.16 A 15-foot wide access road stabilized to a Florida Lime rock Bearing Ratio (LBR) value of 40 must be provided to access any utility line not directly accessible from paved surfaces. The size of this easement may be increased at the discretion of the City based on pipe size and depth of cover. The contractor shall provide density tests from a Florida Department of Transportation (FDOT) certified testing laboratory for the stabilized access road.

3.17 BACKFILL

3.17.1. Excavated materials that are deemed unsuitable by the City Utility Inspector, shall not be used for backfilling purposes. The Contractor shall procure additional material, as necessary, with no additional cost to the City. The material used for backfill shall be fine, loose earth, free from clods, stones, refuse and organic material; subject to the approval of the City Utility Inspector.

3.17.3. Backfilling: After pipe and conduit have been inspected and approved, backfill the trenches, carefully depositing the fill and compacting to the center line of the pipeline on both sides. Place the remainder of the backfill in maximum one-foot layers and compact in conformance to AWWA C600, Section 3.5. After backfilling, dress trenches to conform to adjacent contours. If trenches are improperly filled or if settlement occurs, they shall be refilled and re-dressed. All valves, fittings and restrained joints shall be left uncovered for inspection and acceptance by the City Utility Inspector. The Inspector has the authority to require excavation of any appurtenances for verification of construction techniques.

3.18. COMPACTION REQUIREMENTS: Place backfill in equal layers, compatible with equipment used, and compact each layer in accordance with Table below and ASSHTO T-180.

TABLE
PERCENT OF MAX. DENSITY

LOCATION OF BACKFILL	AT OPTIMUM MOISTURE
Under paved areas:	
upper 12 inches	98
below 12 inches	95
Outside paved surfaces	95

3.19. PIPE AND FITTINGS – MARKING: All main pipes, including fittings, shall be color-coded or marked using the predominant color of the respective utility to differentiate drinking water from reclaimed or sewer. Underground plastic pipe shall be solid-wall pipe, shall have a co-extruded external skin, or shall be black pipe with stripes incorporated into, or applied to, the pipe wall. Pipe striped during manufacturing of the pipe shall have continuous stripes that run parallel to the axis of the pipe, that are located at no greater than 90-degree intervals around the pipe, and that will remain intact during and after installation of the pipe. Potable pipe is to be blue, raw water is to be white (stripes to be olive/light green with stenciled "RAW WATER MAIN"), wastewater pipe is to be green and reclaim is to be pantone purple.

3.20. PIPE AND FITTINGS – RESTRAINT: Provide mechanical restraint fittings at each valve, fire hydrant connection, and on pipe joints as required (see Exhibit C3, in Appendix B). See Appendix A for the approved product list for acceptable materials. All Brass fittings and appurtenances shall be lead free and manufactured in America.

3.21. DUCTILE IRON PIPE AND FITTINGS

3.21.1. PIPE: All sizes of pipe shall be a laying length of 18'-0" to 20'-0". Ductile iron (DI) pipe shall conform to the latest revision of ANSI/AWWA C150/A21.50. When the installation of a main will cross storm drains, open ditches, or other pipelines, or in abnormal laying conditions, an increased pressure class of pipe may be required by the City on a case-by-case basis. Placement of mains along interior side or rear lot lines or stormwater retention pond berms are not approved. Jack and bore carrier pipe shall be D.I. pipe. Polyethylene encasement (thickness: eight (8) mils; color: black or blue for potable) conforming to the latest revision of AWWA/ANSI C105/ A21.5, shall be required on all DIP mains used for fire line backflow preventer. Polymerizing vinyl chloride (PVC) sleeve encasement (thickness: eight (8) mils; color: black or blue for potable, green for wastewater, pantone for reclaim) is required on all DIP mains.

3.21.2. FITTINGS: Cast iron fittings are not acceptable. Ductile iron fittings and special castings shall conform to the type of pipe for minimum working pressure of 150 psi. Fittings shall conform to ANSI Standard A-21.10 (AWWA C111). Short body pattern shall normally be installed unless otherwise approved by COT. Nuts and bolts shall be high tensile strength stainless steel for flanged fittings and COR-TEN® on mechanical joints with each type marked as such on the nuts and bolts.

3.21.3. LININGS AND COATINGS: All ductile iron pipe and fittings shall be thin cement lined. The lining shall comply with ANSI/AWWA C104/A21.4, latest revision. The exterior of all buried pipe shall have a standard asphaltic coating as provided by the manufacturer.

3.21.4. GASKETS: Lubricants which support microbiological growth shall not be used. EPDM rubber shall be used for gasket material.

3.21.5. Flanged joints shall conform to ANSI A21.15 (AWWA C115) NSI B16.1, faced, and drilled 125 pounds. Nuts and bolts shall be made of high tensile strength Type 316 stainless steel having a minimum yield strength of 45,000 psi, and shall contain sufficient chromium to resist corrosion, oxidation and rust. U.S. manufacturers only unless otherwise specified. Threads shall be in accordance with ANSI B1.1, Unified Inch Screw Threads, and with B1.2, Screw Threads, Gauges and Gauging, conforming to the course thread series (UNC) Unified Coarse, with threads Class 2A external and Class 2B internal. Bolts 3/4" and smaller shall be furnished with heavy hex heads conforming to ANSI B18.2.1. Bolts larger than 3/4" may have either standard or heavy hex heads conforming the ANSI B18.2.1. Tee head or hex head shall be made of high tensile strength Type 316 stainless steel having a minimum yield strength of 45,000 psi and comply with the dimensions outlined in ANSI/AWWA C111/A.21.11.

3.21.6 Sleeve type couplings: Provide couplings where needed to make piping connections. Provide full-length mechanical joint ductile iron solid sleeve with 12" minimum length.

3.22. POLYVINYL CHLORIDE (PVC) PIPE

3.22.1. Four (4) inch through twelve (12) inch PVC pipe shall conform to the requirements found in AWWA Standard C900 (PVC Pressure Pipe), and fourteen (14) inch through forty-eight (48) inch PVC pipe shall conform to the requirements found in AWWA Standard C905. The pipe shall be Class 150 (DR 18), and shall bear the seal of a testing agency verifying the suitability of the pipe material for service. The pipe shall have the following markings: Manufacturer's name or trademark and production code or manufacturing date (day, month, and year); DR 18; Class 150; C900 or C905, as applicable; ASTM D-1784; NSF-PW for potable and raw water. NSF-DWV for wastewater and NSF-RW for reclaimed water.

3.22.2. All PVC pipe and fittings used in the sanitary sewer system shall meet extra strength requirements conforming to the latest ASTM D3034 standard, maximum SDR 35, for six inch (6") through fifteen inch (15") PVC and ASTM F679 standard, minimum PS 46 for eighteen inch (18") through forty eight inch (48") PVC. The uniform minimum pipe stiffness at five percent (5%) deflection shall be 46 psi. Pipe and fittings shall be marked in accordance with ASTM D3034 and ASTM F679, as applicable. The bell shall consist of an integral wall section with solid cross-section rubber ring factory assembled, which securely locks in place to prevent displacement and meets the requirements of the latest revision of ASTM D3212. Joints shall be factory tested in accordance with ASTM D3212 and all physical and chemical requirements of pipe and fittings are to pass all tests at 73 degrees (F).

3.22.3. All PVC pipe, fittings and adapters shall bear the seal of NSF International Standard No. 14 certification.

3.22.4. Bell and spigot PVC pipe shall have rubber ring gaskets, which conform to manufacturer's standard dimensions and tolerances, which meet the requirements of AWWA Specifications. Integral wall bell must meet the ASTM D-2122 (C900) requirement.

3.22.5. Solvent center jointing of PVC pipe is not permitted on City owned main.

3.22.6. All PVC mains shall have a suitable conductive location wire. The wire shall be 10-gauge single-conductor copper clad with the respective insulation color. *Only blue (potable), olive/light green (raw water), green (wastewater), and pantone (reclaim water) are acceptable.* The wire shall be continuous between fittings. Where other lines or service lines join the main, the wire shall be secured to each line direct bury, self-striping, locking connector specifically used for making connections to underground wire systems; see approved vendor list for approved products. Wire is not to be fixed/taped to pipe or wrapped around megalugs or bolts. All fire hydrants shall have the wire wrapped around the barrel section to grade level and connected to the wire on the main. All valves shall have a minimum of four (4) feet of wire into each valve box, connected to the main wire. See reference detail in Appendix B.

3.22.7. All mains shall have caution tape.

3.23. HIGH DENSITY POLYETHYLENE (HDPE) PIPE

3.23.1. Four (4) inch through sixty (60) inch diameter HDPE pipe shall conform to the requirements found in AWWA Standard C906; utilizing ductile iron pipe sizes (DIPS). The pipe shall be Pressure Class 160 at a minimum, and shall bear the seal of a testing agency verifying the suitability of the pipe material. The pipe shall have the following markings: Nominal size and diameter base (DIPS); Dimension Ratio (such as DR 11); manufacturer's name or trademark and production code or manufacturing date (day, month, and year); standard material code designation (such as PE 3408); Pressure Class; AWWA C906; NSF-PW for potable and raw water. NSF-DFW for wastewater and NSF-RW for reclaimed water.

3.23.2. All HDPE pipe, fittings and adapters shall bear the seal of NSF International Standard No. 14 certification.

3.23.3. All HDPE mains shall have two (2) separate strands of a suitable conductive location wire installed with the main.The wire shall be 10-gauge solid copper clad wire with the respective insulation color. *Potable water is blue, sewer is green and reclaim water is pantone purple.* Wire is not to be fixed/taped to pipe or wrapped around megalugs or bolts. Wire is to be designed to be used for horizontal directional bore applications with a minimum break load of 1,940 lbs. and a 45 mil HDPE protective jacket.

3.23.4. Butt fusion shall be used for pipe joints using HDPE. For joints between HDPE and PVC pipe, a fused MJ adaptor shall be used.

3.24. GATE VALVES

3.24.1 All valves will meet or exceed all requirements of AWWA C509 or C515 Standards, latest revision. All valves shall be resilient wedge gate valves. All valves shall be equipped with a non-rising stem. All iron body parts will be full wall ductile iron conforming to the requirements of ASTM A395 or ASTM A536 and contain no more than 0.08 percent phosphorus and valves will be cast with a flat bottom design to allow them to stand upright during installation or storage. Outer valve body will have raised lettering cast in, providing manufacturer's name, valve size, year of manufacture, pressure rating, location of casting, and each part is to be clearly marked with either "D.I." or "ductile iron". All valves will be electro-statically fusion-bonded; epoxy coated, minimum either (8) mil thickness inside and out, conforming to ANSI/AWWA C550-01 Standards or latest revision. Resilient wedge to be ductile iron fully encapsulated with be US Food and Drug Administration approved for potable water and have an EPDM visible marking. All valves will have 250-psig working pressure and a 500-psi static test pressure. Valve stem material will be Grade 18-8 stainless steel, Type 304, ANSI 420/ASTM A276 with no measurable level of lead content. Valves will have two upper o-ring seals on the stem above the thrust collar and at least one o-ring seal below the collar so designed to allow for replacement of the upper o-rings with the valve under full operating pressure. Valves will have thrust washers located above and below the thrust collar to insure a smooth frictionless operation. All valves are to be opened Left (counter-clockwise). All valves will have a 2" Ductile Iron wrench nut with the direction of valve operation clearly visible when looking down on the nut. Hold down nut or bolt will be Type 316 stainless steel. All exterior bonnet and thrust collar bolting, whether recessed or exposed, is to be Type 316 Stainless Steel and marked by type. The waterway seat area will be smooth without ridges or cavities and valves will have full size bore throughout the flow-way. All valves will be hydrostatically pressure tested prior to shipment in compliance with AWWA C509 or C515 Standards,and will be covered by the manufacturer's Ten Year Limited Warranty from date of purchase by the end user. Joint connections as specified will conform to ANSI/AWWA Standards as follows:

3.24.1.1 Flanged outlets will conform to dimensions and drillings of ANSI B16.1 Class 125 or ANSI/AWWA C110/A21.10 and will not be considered equal to Tapping Outlets.

3.24.1.2 Mechanical Joint outlets shall conform to ANSI/AWWA C111/A21.11

3.24.1.3 Tapping Valves shall have an alignment boss on the flanged outlet with a mechanical joint outlet conforming to ANSI B16.1, Class 125 and ANSI/AWWA C111/A21.11. (Flanged outlets are not an acceptable substitute for tapping purposes.)

3.24.1.4. Threaded outlets will be NPT threads conforming to ANSI B1.20.1.

3.24.2. Provide stem extensions on all valves where the top of the operator nut is located greater than thirty-six (36) inches below the top of the valve box and shall be bolted onto valve nut.

3.24.3. **All valves installed in the distribution system and main extensions shall be protected by an adjustable 5-1/4" cast iron valve box similar, or equal, to Industry Standard #461-S or 562-S. Covers will be marked and painted appropriately. The box must be full length with bell end over operating nut. Cut pipe sections will not be allowed as valve box extensions Paint type (Rust-Oleum) as shown in Exhibit W-12, typical 2" blow off detail, shall be used**.

3.24.4. Future access line valves, located at a temporary dead end, shall conform to the City of Titusville standard blow-off detail.

3.24.5. VALVE LOCATION MARKING: Curbs shall be etched with the letter "V", three (3) inches in height, with the point of the "V" facing the valve, to designate location. The curb etching should be painted the corresponding appropriate color; blue for potable water, green for sewer, and pantone purple for reclaim.

3.25. TAPPING SADDLES

3.25.1. Tapping PVC Pipe: Only shell cutters will be used to tap PVC pipe and must be disinfected for water taps. The removal of the tapping coupon is required. No other tapping methods will be accepted.

3.25.2. The tapping saddle and corporation stop must be installed by the Contractor and inspected by the City Utility Inspector prior to making the tap.

3.25.3. No reverse taps are allowed unless approved by the Water Resources Department.

3.25.4. All tapping coupons are to be turned over to the Water Resources Department including service taps, jumpers, tapping and include labels on the coupons.

3.26. TAPPING SLEEVES

3.26.1 These specifications are according to application, size and engineering requirements.

3.26.2. Acceptable tapping sleeves shall be all stainless steel Type 304/ Grade 18-8 for sleeve, body (shell), branch, bolts and nuts. All fitting parts are heli-arc welded. Full 360 pipe coverage gasket sealing. Flange is to be recessed per MSS SP-60. Notification to the City Utility Inspector, is required before installation for material inspection. After application of the tapping sleeve and valve, pressure test verification is required prior to drilling. Saddles will be tested at 150 PSI for 15 minutes with no allowable leakage witnessed by the Inspector. Forcemain may be tested to 100 psi for 15 minutes. See Appendix "A" for approved vendor list for acceptable materials.

3.27. TAPPING VALVES

3.27.1. Tapping valves shall be field disinfected as required in Section 5.18 for potable water.

3.27.2. Tapping valves shall be resilient seated, non-rising stem, open left, two (2) inch square operating nut, for vertical mounting in approximately level setting on buried water lines.The valves shall conform to AWWA Standard C509 or C515, latest edition. All resilient seat tapping valves shall be full port size waterway.

3.27.3. The valve inlet shall be flange Class 125, with ring guide as per MSS SP-60. Outlet shall be mechanical joint as per AWWA C110.

3.27.4. **Proper trench support of the tap valve is required during the drilling operation.**

3.28. FINAL ACCEPTANCE BY THE CITY

3.28.1. Final acceptance of the water distribution, reclaimed distribution, force main distribution, sanitary gravity systems,lift station and pervious concrete systems will be made only after:

3.28.1.1. All tests have been completed, passed, and approved by the City Utility Inspector,

3.28.1.2. A final walk-through with the Water Resources Department has been completed and the improvements are found to be in accordance with the applicable regulations of the City, the Florida Department of Environmental Protection, Florida Department of Transportation, Brevard County and the standards contained herein.

3.28.2. The City is furnished with all of the following applicable items:

3.28.2.1. Drawings by a Florida Registered Surveyor or Engineer, with elevations based on the NAVD 1988, and an electronic copy in PDF and AutoCAD format, in state plane coordinates, in accordance with the Water Resources Department.

3.28.2.2. Executed Easement(s).

3.28.2.3. Executed Right-of-Way Deed.

3.28.2.4. Certification of Substantial Completion noting any deviations from the Engineer of Record.

3.28.2.5. A maintenance bond, based on 10% of the construction cost. It shall be the responsibility of the Developer/Contractor to rectify any and all deficiencies which occur within two (2) years after the date of acceptance by the City of Titusville.

3.28.2.6. Warranty Deed for City owned lift stations.

3.28.2.7. Private Lift Station agreement for all privately owned lift stations.

3.28.2.8. Pretreatment Agreement for all grease traps and oil/water separators.

3.28.2.9. A Bill of Sale transferring ownership of the city utilities to the City of Titusville.

City of Titusville
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CITY OF TITUSVILLE
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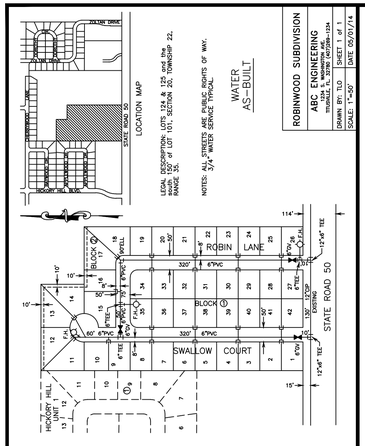
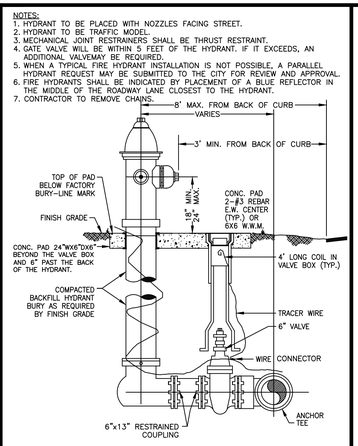
No.	Revision	Date
	AS, WILL, KM, TLO,	1-31-19
	AS	5-6-22

COMMON DETAILS AND SPECIFICATIONS

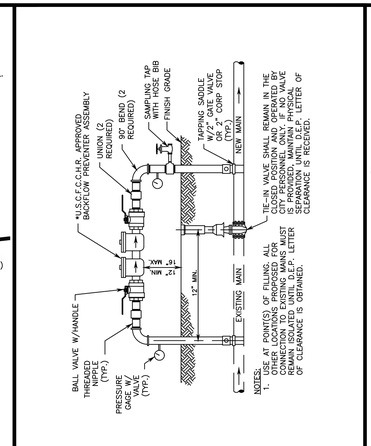
WATER RESOURCES DEPT.	2 of 2 SHEET
May 2022 DATE	
N.T.S. SCALE	



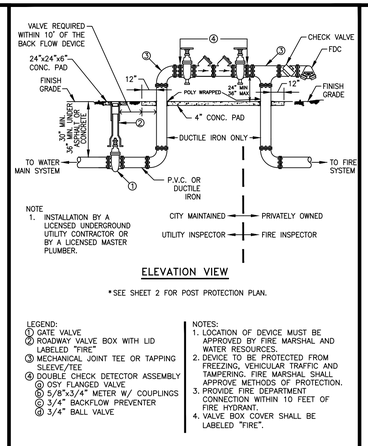
WATER DISTRIBUTION AS-BUILT SAMPLE	DEPARTMENT OF WATER RESOURCES	
	DATE: 01/19	EXHIBIT NO. W1
CITY OF TITUSVILLE, FLORIDA	SCALE: NTS	SHT. 1 OF 1



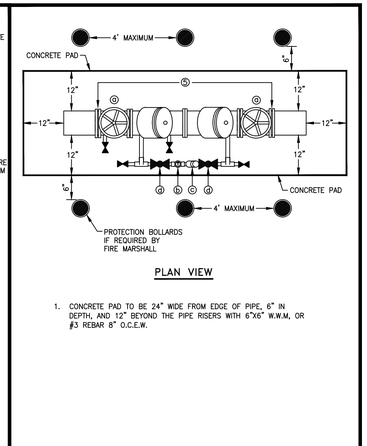
TYPICAL FIRE HYDRANT & GATE VALVE INSTALLATION	DEPARTMENT OF WATER RESOURCES	
	DATE: 05/22	EXHIBIT NO. W2
CITY OF TITUSVILLE, FLORIDA	SCALE: NTS	SHT. 1 OF 1



TEMPORARY JUMPER CONNECTION DETAIL	DEPARTMENT OF WATER RESOURCES	
	DATE: 01/19	EXHIBIT NO. W3
CITY OF TITUSVILLE, FLORIDA	SCALE: NTS	SHT. 1 OF 2



FIRE LINE BACKFLOW PREVENTER	DEPARTMENT OF WATER RESOURCES	
	DATE: 05/22	EXHIBIT NO. W4
CITY OF TITUSVILLE, FLORIDA	SCALE: NTS	SHT. 1 OF 2



FIRE LINE BACKFLOW PREVENTER	DEPARTMENT OF WATER RESOURCES	
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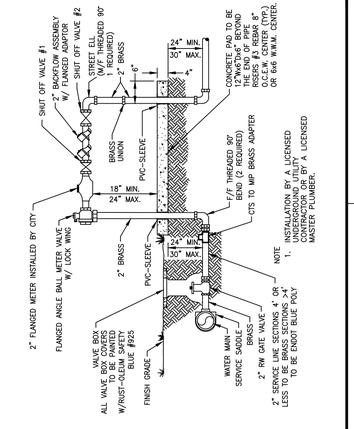
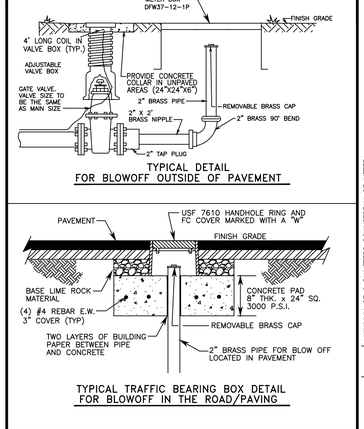
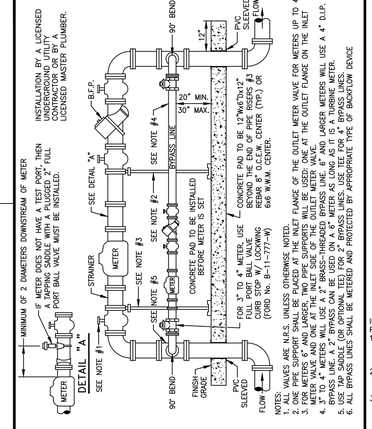
CITY OF TITUSVILLE, FLORIDA	SCALE: NTS	SHT. 2 OF 2



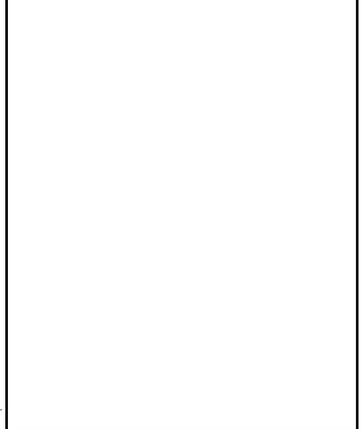
TYPICAL RESIDENTIAL SERVICE CONNECTIONS	DEPARTMENT OF WATER RESOURCES	
	DATE: 05/22	EXHIBIT NO. W6
CITY OF TITUSVILLE, FLORIDA	SCALE: NTS	SHT. 2 OF 2



TYPICAL WATER METER INSTALLATION ON A SINGLE SERVICE LINE	DEPARTMENT OF WATER RESOURCES	
	DATE: 01/19	EXHIBIT NO. W7
CITY OF TITUSVILLE, FLORIDA	SCALE: NTS	SHT. 1 OF 1



TYPICAL 1" BACKFLOW INSTALLATION	DEPARTMENT OF WATER RESOURCES	
	DATE: 01/19	EXHIBIT NO. W9
CITY OF TITUSVILLE, FLORIDA	SCALE: NTS	SHT. 1 OF 1



TYPICAL 1.5" BACKFLOW INSTALLATION	DEPARTMENT OF WATER RESOURCES	
	DATE: 01/19	EXHIBIT NO. W10
CITY OF TITUSVILLE, FLORIDA	SCALE: N.T.S.	SHEET: 1 OF 1

TYPICAL 2" BACKFLOW INSTALLATION	DEPARTMENT OF WATER RESOURCES	
	DATE: 01/19	EXHIBIT NO. W11
CITY OF TITUSVILLE, FLORIDA	SCALE: N.T.S.	SHEET: 1 OF 1

TYPICAL 2" BLOWOFF DETAILS	DEPARTMENT OF WATER RESOURCES	
	DATE: 05/22	EXHIBIT NO. W12
CITY OF TITUSVILLE, FLORIDA	SCALE: N.T.S.	SHEET: 1 OF 1

TYPICAL 3" OR LARGER METER INSTALLATION	DEPARTMENT OF WATER RESOURCES	
	DATE: 05/22	EXHIBIT NO. W13
CITY OF TITUSVILLE, FLORIDA	SCALE: NTS	SHT. 1 OF 1

TYPICAL HYDRANT AND FDC DETAILS	DEPARTMENT OF WATER RESOURCES	
	DATE: 01/19	EXHIBIT NO. W14
CITY OF TITUSVILLE, FLORIDA	SCALE: N.T.S.	SHEET: 1 OF 1

	DEPARTMENT OF WATER RESOURCES	
	DATE:	EXHIBIT NO.
CITY OF TITUSVILLE, FLORIDA	SCALE: NTS	SHT. 1 OF 1

TITUSVILLE, FLORIDA
FOUNDED 1867

City of Titusville

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No.	Revision	Date

POTABLE WATER DETAILS AND SPECIFICATIONS

WATER RESOURCES DEPT.	1 of 2
May 2022 DATE	
N.T.S. SCALE	SHEET

4.0. POTABLE WATER DESIGN AND CONSTRUCTION STANDARDS

4.1. The configuration and location of any proposed/extended water main and service line shall be at the sole discretion of the COT to maximize supply/service pressure, minimize maintenance, and ensure water quality. Water service connection points shall be located on water mains providing best water quality.

4.2. The City of Titusville shall own and maintain all public portions of the water system up to the water meter.

4.3. The water distribution system and/or water main extensions shall be designed and constructed in accordance with the fire protection requirements as approved by the Fire Department.

4.4. RIGHTS-OF-WAY: Water mains shall maintain a consistent alignment with respect to the centerline of the road. In residential developments, mains should be installed as illustrated on the City's detail. Exceptions will be made on a case-by-case basis. In all cases, mains shall be installed along one side of the road, with crossings kept to a minimum.

4.5. The minimum water line easement width shall be twenty (20) feet. Additional easement widths shall be provided at the discretion of the City based on the depth of the pipe.

4.6. SIZING WATER SERVICE LINES, METERS, AND BACKFLOW PREVENTERS: Sizing of water service lines and meters shall be per American Water Works Association "Manual of Water Supply Practices, Sizing Water Service Lines and Meters, AWWA M22', latest edition. In accordance with the table shown below, the sizing of water service lines, meters and backflow preventers shall be:

WATER SERVICE LINE SERVICE SIZE	METER SIZE	BACKFLOW PREVENTER SIZE
1"	5/8" x 3/4"	3/4"
1"	1"	1"
2"	1-1/2"	1-1/2"
2"	2"	2"
4"	3"	3"
4"	4"	4"
Larger than 4"	Larger than 4"	As approved by Water Resources Department

Note: Meter and backflow devices will be size on size.

4.7. Average Daily Flow: Average daily water flow shall be calculated by referencing the equivalent residential connection (ERC) flow rates as outlined in "Code of Ordinances City of Titusville, Florida, Land Development Regulations". Maximum daily water flow shall be calculated as two (2) times the average daily water flow, and the peak hourly flow shall be calculated as four (4) times the average daily water flow.

4.8. Fire flow requirements: All fire hydrants are to be designed to operate at a minimum of 1,000 gpm at 20 psi at the farthest fire hydrant from the initial point of connection to the residential development. Commercial and Industrial fire flow requirements shall be determined in accordance with the Florida Fire Prevention Code which includes NFPA 1 and NFPA Life Safety Code 101. Where fire flow requirements exceed the anticipated available fire flow from the central water system, an on-site fire protection system, or other Fire Department approved mitigation, shall be utilized.

4.9. Design Calculations: The Project Engineer shall submit signed, sealed and dated design calculations with the plans for all water distribution projects. Calculations shall show that the water mains will have sufficient hydraulic capacity to transport peak hourly flows and the combination of maximum daily flows and fire flows while meeting the requirements of Section 5.11. Minor head losses through meters, backflow devices, fittings, valves, etc shall also be included in the calculations.

4.10. Pressure: All water mains shall be designed in accordance with Section 5.9 above. The system shall be designed to maintain a minimum pressure of 20 psi at all points in the distribution system under all conditions of flow. Higher pressures may be required at commercial, industrial and high-density residential areas. The design pressure within the system should be verified with the COT prior to beginning any calculations. For excessive pressures, pressure reducing provisions may be required.

4.11. Design Friction Loss: Friction losses through mains shall be based on the Hazen and Williams formula. In the use of the Hazen and Williams formula, the value for "C" shall be 120 for ductile iron pipe and 130 for PVC and HDPE pipe. "C" values greater than 130 shall not be allowed.

4.12. Potable water: All pipe and fittings for potable water distribution shall be ductile iron or polyvinyl chloride (PVC) pipe. High Density Polyethylene (HDPE) pipe can be used for directional boring purposes only. All fittings and appurtenances must be lead free.

4.13. TEST AND INSPECTION:

4.14. DISINFECTION- BACTERIOLOGICAL TESTING:

4.14.1. All potable water pipe, fittings, valves and service lines shall be thoroughly disinfected prior to being placed in service. Disinfection shall follow the applicable procedure established as set forth in AWWA C651, latest revision. Samples shall be collected by a representative of an approved State Certified Testing Laboratory, with the City Utility Inspector, present from fittings provided by the Contractor for that purpose.

4.14.2. Flows for chlorination purposes are to be controlled from the downstream or blow-off end of the water line. The location of sampling points shall comply with the conditions of the Florida Department of Environmental Protection (FDEP) permit. The sample points must have a stainless steel or brass, non-threaded, smooth-nosed, downward spouted hose bib mounted on a rigid stand pipe at least three feet above the finished grade. Warning tags will be attached to each sample point by the City.

4.14.3. The chlorine residual is to remain in all lines for a minimum period of 24 hours. After notification from the City Utility Inspector, all treated water shall be thoroughly flushed from the newly laid pipe at its extremity until the replacement water throughout its lengths shows a free chlorine residual not in excess of that normally carried in the system.

4.14.4. After flushing, water samples collected on two successive days from the treated piping system, as directed by the City Utility Inspector, shall show acceptable bacteriological results. All bacteriological testing shall be performed by a State Certified Laboratory contracted by the Contractor. Proper chain of custody procedures must be followed and samples shall only be collected by state certified laboratory personnel. Any samples collected by the Contractor will not be accepted.

4.14.5. Should the initial treatment result in an unsatisfactory bacterial test, the original chlorination procedure and bacteriological testing shall be repeated by the Contractor until satisfactory results are obtained.

4.14.6. Copies of all testing results and all related correspondence from the FDEP shall be submitted to the City of Titusville.

4.15. HYDRANTS

4.15.1. Hydrant spacing and location: Fire hydrants in single-family residential areas shall be located so that they are not over 500 feet apart (as measured along a street) and shall be connected to water mains no less than six (6) inches in diameter and to looped water mains whenever possible. Dead end streets or cul-de-sacs shall not have a length greater than 200 feet from the nearest fire hydrant. Fire hydrants in commercial (business, industrial, institutional, and apartment) districts shall be located so that they are not over 250 feet part (as measured along a street) and shall be connected to water mains no less than eight (8) inches in diameter and to looped water mains whenever possible. Hydrant valves shall be located at a distance not greater than 5 feet from the hydrant, unless otherwise approved by the Water Resources Department. Any valves that exceed 5 feet, will require an additional valve. All fire hydrant locations and fire line requirements shall be reviewed and approved by the Fire Department.

4.15.2. All hydrants shall meet or exceed ANSI/AWWA C502's latest edition for dry-barrel fire hydrants and shall, in addition, meet the specific requirements and exceptions which follow. Hydrants shall be assembled and tested in a certified manufacturing facility within the United States, unless otherwise stated. Hydrants shall be listed by Underwriters Laboratory and approved by Factory Mutual for fire line service. UL and FM trademarks shall be cast on the hydrant nozzle section.

4.15.3. Hydrant valve opening shall have an area equal to the area of a 5 1/4-inch minimum diameter circle and be obstructed only by the valve rod. Hydrant main valve closure shall be of the compression type opening against pressure and closing with pressure. Main valve shall be EPDM rubber.

4.15.4. All internal operating parts shall be removable without requiring excavation. Hydrants shall be hydrostatically tested as specified in AWWA C502 and shall be rated at 250 psi minimum working pressure. Hydrant bonnets, weather cover, nozzle section, caps and shoe shall be cast or ductile iron. Hydrants shall consist of one (1) 4.5" NST pumper nozzle and two (2) 2.5" NST hose nozzles. Nozzles threaded into the nozzle section shall have Never-Seez® White Food Grade, or COT approved equal, applied at the factory while being assembled. Cap threads shall be lubricated with Never-Seez® White Food Grade, or COT approved equal, before delivery.

4.15.5. Hydrant shoe shall have an electrostatic applied, fusion bonded, epoxy coating internally and externally. The coating shall meet or exceed the requirements of AWWA C550. Coating to be applied only at the manufacturer's facility. The standpipe shall be Bitumen coated or fusion bonded epoxy coated internally and externally with a bury line present below the break flange to indicate proper installation depth. Bury depth shall be clearly marked on standpipe. All hydrants shall be clearly stenciled "Titusville" on the standpipe.

4.15.6. The hydrant's upper and lower stem, as well as its break coupling and internal pins and clips shall be manufactured of stainless steel, Type 304 with no measurable level of lead content. Breakaway coupling may be fusion bonded epoxy coated cast/ductile iron with stainless steel pins. All external bolting shall be manufactured of stainless steel, Type 316.

4.15.7. All hydrants shall be of the traffic breakaway type and allow 360-degree rotation to position the pumper nozzle in the desired direction after installation. A lubrication port shall be provided for the installation of lubrication without disassembly of the bonnet section. The reservoir shall be filled with NSF/FDA approved food grade grease at the manufacturer's facility.

4.15.8. The main valve shall not bottom out onto the shoe section. Travel stop nuts may be used in bonnet section to prevent this. Operating nut shall be a 1-1/2" pentagon bronze nut and shall open counter clockwise and have a protective weather cover. Drain holes will not be permitted. If hydrant is manufactured with drain holes, then drain holes shall be plugged with brass plugs.

4.15.9. All hydrants shall be covered by a Manufacturer's Ten (10) Year Limited Warranty from the date of purchase by the end user and delivered within thirty (30) days from receipt of purchase order.

4.15.10. All hydrants will have an external sprayed on epoxy coating applied at the factory. Epoxy coating shall be Sherwin-Williams Acrolon 218 HS, an Aliphatic Acrylic Polyurethane, or Water Resources Department approved equal. The color for all City owned and maintained hydrants shall be #95-8002 Safety Yellow (Color #330). The color for all privately owned and maintained hydrants shall be painted with Sherwin-Williams Acrolon 218 HS, an Aliphatic Acrylic Polyurethane, or Water Resources Department approved equal in Red. **All hydrants are to recieve an additional field coating prior to acceptance by Water Resources Department.**

4.15.11. Non-operational hydrants shall be clearly identified by the Contractor as being out of service. The non-operational hydrant will have an out of service tag on the hydrant provided by the Contractor. The out of service tag shall be placed on the 4.5 inch pumper nozzle upon installation.

4.15.12. 1.1.1.All hydrants shall stand plumb with the pumper nozzle facing the street curb and the bury line of the hydrant at the finished grade. The break-away flange and bolts must not be in contact with the ground or the concrete hydrant protection pad. A 24" x 24" x 6" pad must be poured around the barrel bury line and valve box at finished grade. Proper soil compaction shall be done before pouring pad. In unstable soil as determined by the City Utility Inspector, the hydrant shoe shall be placed directly on a concrete pad, 18" x 18" x 6", prior to mechanical restraining. Various means of mechanical blocking are acceptable, re: hydrant tees, M.J. anchor couplings or retainer glands. (see City standard detail).

4.15.13. All hydrant leads shall be a minimum of six (6) inches inside diameter and be provided with a six (6) inch valve between the hydrant and the main. The hydrant valve shall be installed within five (5) feet of the hydrant. Any valves exceeding 5 feet, will require an additional valve. Fire hydrants shall be located as shown on the approved plans in a completely accessible location, maintaining a minimum of three (3) feet and a maximum of eight (8) feet from the back of curb to the centerline of the hydrant. In residential locations, hydrants are usually to be located at intersections or property corners. Hydrant locations on or near state highways shall be in accordance with Department of Transportation requirements. City of Titusville personnel, Brevard County Fire Department, and Department of Transportation have the final authority to mandate fire hydrant placements and/or relocations. The centerline pumper nozzle must be a minimum of 18 inches or a maximum of 24 inches above finished grade. Parallel hydrants are approved on case by case basis by the Water Resources Department.

4.15.14 No hydrant extensions are permitted on new construction.

4.15.15 Fire hydrant locations shall be indicated by placement of a blue reflector in the middle of the roadway lane closest to the hydrant.

4.16. WATER SERVICES

4.16.1. All installations shall be in accordance with City of Titusville Specification details for single and double service lines. All water service lines one (1) inch in diameter shall be constructed of Type "K" soft copper, which shall conform to the requirements of AWWA Standard C800. Two (2) inch diameter service lines shall be constructed of Type "K" copper tubing or SDR 9 EndoTrace blue polyethylene with racer wire as manufactured by Endot Industries, Inc., Rockaway, NJ, utilizing copper tube sizes (CTS) and compression adapters. All brass parts and materials are to be domestic unless otherwise noted by the Water Resources Department.

4.16.2. Location: All utility appurtenances will be located in the right-of-way. Service lines shall not be terminated in the sidewalk or within five (5) feet adjacent to driveways. Location of service lines in single family and townhouse developments shall be at alternating lot lines. Multiple service line installations shall be located in common areas, and curb stops spaced no more than 18-20 inches apart in single file. Curb stops shall be mounted in a horizontal position at a depth of no greater than ten (10) inches from finished grade.

4.16.3. Meter boxes must be installed at the time of service line installation, prior to final inspection. Meter box face is to be 12" from the back edge of sidewalk.

4.16.4. Service saddles: Service saddles shall be used for all connections to PVC pipe. Saddle body for C900 pipe shall be nylon/epoxy coated ductile iron and tapped for AWWA/CC threads. Body and bands must be factory pre-sized for C900 pipe diameter. Bands shall be stainless steel.

4.16.5. Curbs shall be etched with the letter "W", three (3) inches in height, to designate the location of the water service. The curb etching should be painted blue for potable water.

4.16.6. Water service lines crossing paved roadways shall be installed by horizontal directional drilling method. The Contractor shall furnish all material, equipment, transportation, tools and labor, and shall comply with all regulations of the governing authority to install the service lines.

4.17. TAPPING:

4.17.1. Service saddle placement on main shall be at least 45 degrees off vertical and not to exceed horizontal positioning. No vertical tapping will be allowed except at temporary jumper connections.

4.17.2. Corporation stops must be full port and shall be CC thread to CTS. Corporation stops will be used only for one (1) inch taps. See Appendix A for approved vendor list for acceptable materials.

4.17.3. Curb stops must be full port and shall be CTS to meter swivel nut. No H pattern or roundway type will be permitted. Curb stops will be used only for one (1) inch service lines. See Appendix A for approved vendor list for acceptable materials.

4.17.4. Meter protection boxes shall be according to size of service line. Meter boxes are to be injection molded of structural foam recycled polyolefin material with cast iron reader cover. When new service lines are installed, meter boxes shall be placed over curb stops with sufficient space for the installation of the water meter by the City. The top of the meter box shall be adjusted to grade and shall be in undamaged condition. Water meters will not be installed by the City unless all requirements of service line concrete pad and meter box installations are acceptable. If it is necessary to locate meter boxes near concrete or paved areas, steel meter box covers with reader lids shall be required. See Appendix A for approved vendor list for acceptable materials.

4.17.5. Large meter installations: All meters three (3) inches and larger shall be constructed with Class 125 flange fittings and shall be installed above ground. All flange fittings and valves will be restrained and tested prior to the large meter installation. The meter will be installed by the City. All meter valves are to be non-rising stem, hand wheel operation. Meters up to four (4) inches are to have a two (2) inch bypass line; meters six (6) inches and larger are to have a three (3) inch bypass line. All items including the concrete pad must be installed piror to meter set. No wet taps are allowed to be done on Fridays.

4.18. TAPPING SLEEVES: Tapping sleeves and valves will be field tested at 150 PSI for 15 minutes with no allowable leakage as witnessed by the Inspector. Field disinfection procedures shall be utilized for the installation of tapping sleeves and tapping valves to the existing water mains. The tap sleeve and valve shall be disinfected immediately prior to the installation of the appliances to the potable water main. The application of a concentrated solution of hypochlorite (minimum, 1% available chlorine) shall be applied to the inside of the sleeve and valve. Methods of application of disinfection solution shall be by swabbing or by pressure spraying.

4.19. FIRE LINES: Fire lines for commercial, industrial, residential or other buildings may be required by the City of Titusville Fire Department. All new fire line systems connected to the City of Titusville water distribution system shall have an approved backflow prevention device installed at the water source. This device shall be a Double Detector Check Valve Assembly with OSY resilient gate valves with a bypass monitor meter. As per the Water Resources requirements, the device shall be installed above ground and outside FDOT right-of-way, when applicable. If the device is installed inside FDOT right-of-way, it must comply with FDOT specifications. The installation of the DDCVA device will be inspected by the City Utility Inspector, and test results shall be submitted to the Water Resources Department. All device locations shall be reviewed for approval by the Water Resources Department. If a foam fire system or high hazard (pump) is installed then a RPDA is needed instead of a DDCVA. Inspection and testing of the fire line by the Fire Inspector shall begin at the outlet valve connection. Fire line paint is specified per the Florida fire code. Stainless steel, meters, and other appurtenances will not be painted.

4.20. BACKFLOW PREVENTERS: The City of Titusville has the primary responsibility of protecting the potable water distribution system against possible contamination or pollution resulting from a source of cross connection or backflow conditions. In consonance with the above, the City shall require backflow preventer as needed.

4.20.1. All construction and all major modification will be reviewed for the requirement of a backflow preventer. The determination of the type of backflow preventer required will be based upon the "degree of hazard" of on-site facilities or equipment. When a required backflow preventer device is not installed, or is removed or by-passed, non-compliance with these requirements by law may result in the termination of water services to the premises. Two main types of backflow preventers are acceptable; the Double Detector Check Assembly and the Reduced-Pressure Zone Backflow Preventer. All commercial businesses are at a minimum Double Detector Check Assembly. All multi-unit facilities are at a minimum a Double Detector Check Assembly.

4.20.2. These devices shall meet the requirements of AWWA Standard C510, "Double Check Valve Backflow Prevention Assembly", or AWWA Standard C511, "Reduced-Pressure Zone Backflow Prevention Assembly", as applicable, and be approved by the Foundation for Cross Connection Control and Hydraulic Research. See approved vendor list in Appendix "A".

4.20.3. Following is a partial list of facilities requiring backflow preventer installation at the water meter: manufacturing, processing, and fabricating plants; supermarkets and food processing businesses (restaurants); schools, laundries, piers, medical, health or beauty businesses; booster pump and other pressure systems (water and sewer); boilers, water-cooled A/C systems, irrigation systems, multi-story buildings over two stories, etc. Contact the City's Field Operations Division with questions.

4.20.4. These requirements are in compliance with laws and regulations of the E.P.A. Safe Drinking Water Act of 1974; the Florida Statutes, Rules of the Department of Environmental Protection (DEP) Section 62-555-360; Florida Building Code; and the "City of Titusville Water Resources Department Cross-Connection Control Program Manual". All devices 3/4" through 1-1/2" shall have threaded ends. All BFP devices are to have ball valve or resilient seated inlet and outlet valves. All devices must be testable in-line. Two (2) backflow prevention assemblies in a parallel mounting system may be installed for facilities that require full-time, uninterrupted water service during device testing or maintenance. It is the City's responsibility to ensure installation, as well as operate and maintain the approved backflow prevention device, as directed by the Water Resources Department. The City's Field Operations Division shall only install the devices in the case of retro-fitting existing customers. The devices shall be installed only by a licensed Underground Utility Contractor, Master Plumber or by a Certified Backflow Prevention Device Technician. Refer to City standard details. Backflow prevention concrete pad has to be installed before a meter is set.

4.20.5. All services are required to have as a minimum a dual check.

4.21. A temporary jumper connection, with an approved, tested and certified backflow preventer assembly, is required at all connections between existing active water mains and proposed new water main improvements. Certification is required on site even if certified by the manufacturer. In addition, any relocation or disassembly of the temporary jumper connection will require recertification. All filling of new mains of any size from existing active water mains shall be completed through the jumper connection. All flushing of new mains less than ten (10) inches in diameter shall be completed through the jumper connection. If greater than 10 inches in diameter, a main valve may be used but may only be operated by a City Employee. The jumper connection shall be maintained until after filling, flushing, testing and disinfection of the new main has been successfully completed and clearance for use from the Florida Department of Environmental Protection (FDEP) has been received. The jumper connection shall also be used to maintain a minimum pressure of 20 psi in new mains at all times after disinfection and until the FDEP clearance letter is received. (See appendix C, Exhibit W-4 for temporary jumper connection.)

4.22. VALVES: On straight run mains, valves shall be placed no more than 800 feet apart and at intersections, or as determined by the Water Resources Department. Additional valve placement for operation or maintenance purposes may be required by the Water Resources Department. At tees, 3 valves are required. One in each direction. At a cross, 4 valves are required. One in each direction. The distance between the valves in each direction are to be between 5 to 10 feet.

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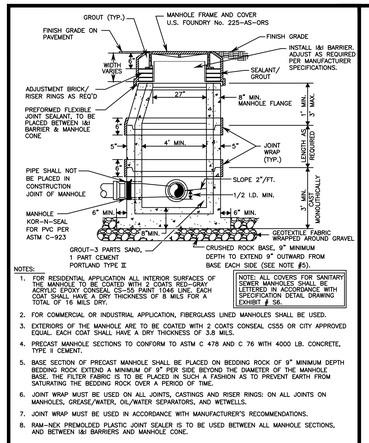
Any detail that is not required for the specific development that these details have been included in the permit set maybe crossed out on this drawing sheet but may not be removed. No additional detail and or specification may be added to this drawing sheet.

No.	Revision	Date
	TLO, KM, WM, AS	1-10-19
	AS	5-9-22

POTABLE WATER DETAILS AND SPECIFICATIONS

WATER RESOURCES DEPT.	2 of 2
May 2022 DATE	
N.T.S. SCALE	SHEET

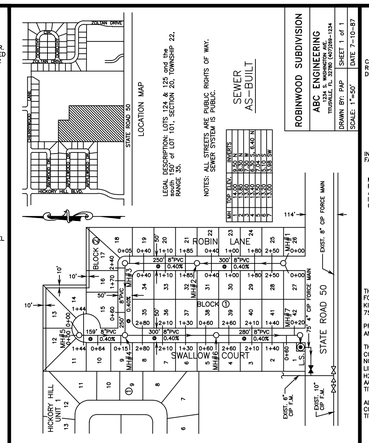


NOTES:

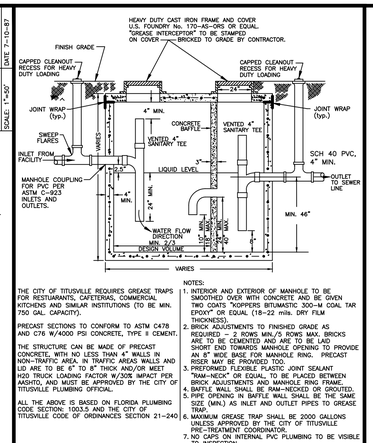
1. FOR RESIDENTIAL APPLICATION ALL INTERIOR SURFACES OF THE MANHOLE TO BE COATED WITH 2 COATS RED-GRAY AGGREGATE EPOXY RUBBER, CS-55 PAINT 1146 LINE, EACH COAT SHALL HAVE A DRY THICKNESS OF 8 MILS FOR A TOTAL OF 16 MILS DRY.
2. FOR COMMERCIAL OR INDUSTRIAL APPLICATION, FIBERGLASS LINED MANHOLES SHALL BE USED.
3. EXTERIORS OF THE MANHOLE ARE TO BE COATED WITH 2 COATS CONSEAL CS55 OR CITY APPROVED EQUAL. EACH COAT SHALL HAVE A DRY THICKNESS OF 3.8 MILS.
4. PRECAST MANHOLE SECTIONS TO CONFORM TO ASTM C 478 AND C 76 WITH 4000 LB. CONCRETE, TYPE II CEMENT.
5. BASE SECTION OF PRECAST MANHOLE SHALL BE PLACED ON BEDDING ROCK OF 9" MINIMUM DEPTH BEDDING ROCK EXTEND A MINIMUM OF 9" PER SIDE BEYOND THE DIAMETER OF THE MANHOLE BASE. THE FILTER FABRIC IS TO BE PLACED IN SUCH A FASHION AS TO PREVENT EARTH FROM SATURATING THE BEDDING ROCK OVER A PERIOD OF TIME.
6. JOINT WRAP MUST BE USED ON ALL JOINTS, CASTINGS AND RISER RINGS: ON ALL JOINTS ON MANHOLES, GREASE/WATER, OIL/WATER SEPARATORS, AND WETWELLS.
7. JOINT WRAP MUST BE USED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
8. RAM-NEK PREMOLDED PLASTIC JOINT SEALER IS TO BE USED BETWEEN ALL MANHOLE SECTIONS, AND BETWEEN I&I BARRIERS AND MANHOLE CONE.

NOTE: ALL COVERS FOR SANITARY SEWER MANHOLES SHALL BE LETTERED IN ACCORDANCE WITH SPECIFICATION DETAIL DRAWING EXHIBIT # S6.

STANDARD ECCENTRIC PRECAST MANHOLE	DEPARTMENT OF WATER RESOURCES	
	DATE: 05/22	EXHIBIT NO. S1
CITY OF TITUSVILLE, FLORIDA	SCALE: NTS	SHT. 1 OF 1



SANITARY SEWER AS-BUILT SAMPLE	DEPARTMENT OF WATER RESOURCES	
	DATE: 01/19	EXHIBIT NO. S2
CITY OF TITUSVILLE, FLORIDA	SCALE: NTS	SHT. 1 OF 1



THE CITY OF TITUSVILLE REQUIRES GREASE TRAPS FOR RESTUARANTS, CAFETERIAS, COMMERCIAL KITCHENS AND SIMILAR INSTITUTIONS (TO BE MIN. 750 GAL. CAPACITY).

PRECAST SECTIONS TO CONFORM TO ASTM CA78 AND C76 W/4000 PSI CONCRETE, TYPE II CEMENT.

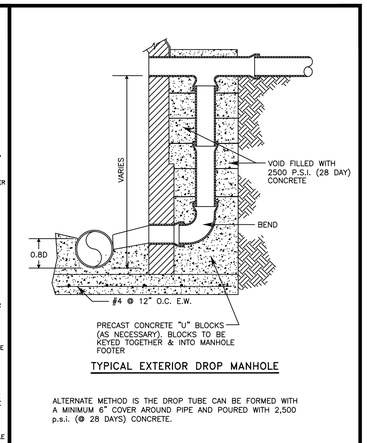
THE STRUCTURE CAN BE MADE OF PRECAST CONCRETE, WITH NO LESS THAN 4" WALLS IN NON-TRAFFIC AREA. IN TRAFFIC AREAS WALLS AND LID ARE TO BE 6" TO 8" THICK AND/OR MEET H20 TRUCK LOADING FACTOR W/30% IMPACT PER AASHTO, AND MUST BE APPROVED BY THE CITY OF TITUSVILLE PLUMBING OFFICIAL.

ALL THE ABOVE IS BASED ON FLORIDA PLUMBING CODE SECTION 1003.5 AND THE CITY OF TITUSVILLE CODE OF ORDINANCES SECTION 21-240

NOTES:

1. INTERIOR AND EXTERIOR OF MANHOLE TO BE SMOOTHED OVER WITH CONCRETE AND BE GIVEN TWO COATS "KOPPERS BITUMASTIC 300-M COAL TAR EPOXY" OR EQUAL (18-22 mils. DRY FILM THICKNESS).
2. BRICK ADJUSTMENTS TO FINISHED GRADE AS REQUIRED – 2 ROWS MIN./5 ROWS MAX. BRICKS ARE TO BE CEMENTED AND ARE TO BE LAID SHORT END TOWARDS MANHOLE OPENING TO PROVIDE AN 8" WIDE BASE FOR MANHOLE RING. PRECAST RISER MAY BE PROVIDED TOO.
3. PREFORMED FLEXIBLE PLASTIC JOINT SEALANT "RAM-NECK" OR EQUAL, TO BE PLACED BETWEEN BRICK ADJUSTMENTS AND MANHOLE RING FRAME.
4. BAFFLE WALL SHALL BE RAM-NECKED OR GROUTED.
5. PIPE OPENING IN BAFFLE WALL SHALL BE THE SAME SIZE (MIN.) AS INLET AND OUTLET PIPES TO GREASE TRAP.
6. MAXIMUM GREASE TRAP SHALL BE 2000 GALLONS UNLESS APPROVED BY THE CITY OF TITUSVILLE PRETREATMENT COORDINATOR.
7. NO CAPS ON INTERNAL PVC PLUMBING TO BE VISIBLE TO INSPECTION.

TYPICAL SECTION THROUGH GREASE INTERCEPTOR	DEPARTMENT OF WATER RESOURCES	
	DATE: 01/19	EXHIBIT NO. S3
CITY OF TITUSVILLE, FLORIDA	SCALE: NTS	SHT. 1 OF 1

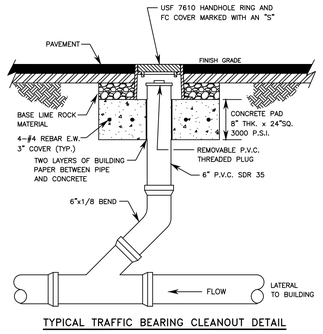


PRECAST CONCRETE "U" BLOCKS (AS NECESSARY). BLOCKS TO BE KEYED TOGETHER & INTO MANHOLE FOOTER

TYPICAL EXTERIOR DROP MANHOLE

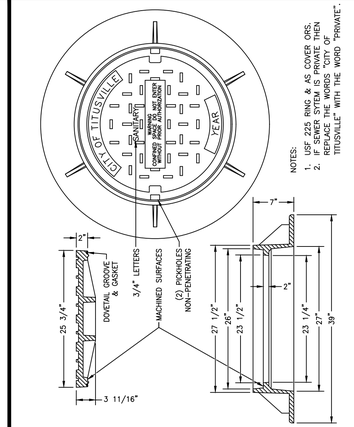
ALTERNATE METHOD IS THE DROP TUBE CAN BE FORMED WITH A MINIMUM 6" COVER AROUND PIPE AND POURED WITH 2,500 p.s.i. (@ 28 DAYS) CONCRETE.

TYPICAL EXTERIOR DROP MANHOLE DETAIL	DEPARTMENT OF WATER RESOURCES	
	DATE: 01/19	EXHIBIT NO. S4
CITY OF TITUSVILLE, FLORIDA	SCALE: NTS	SHT. 1 of 1

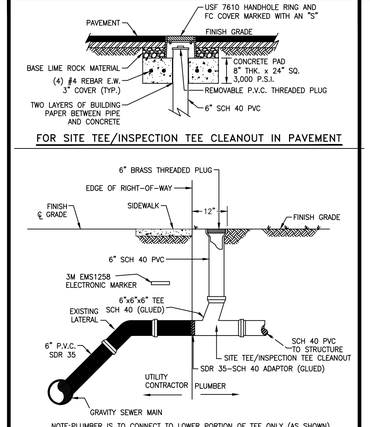


TYPICAL TRAFFIC BEARING CLEANOUT DETAIL

TYPICAL TRAFFIC BEARING CLEANOUT DETAIL	DEPARTMENT OF WATER RESOURCES	
	DATE: 01/19	EXHIBIT NO. S5
CITY OF TITUSVILLE, FLORIDA	SCALE: NTS	SHT. 1 OF 1



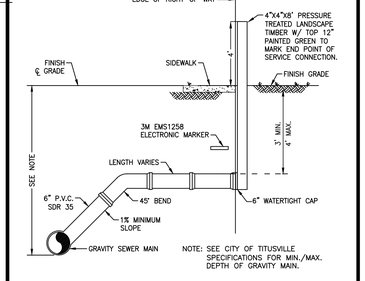
SANITARY SEWER MANHOLE FRAME (RING) & COVER DETAIL	DEPARTMENT OF WATER RESOURCES	
	DATE: 01/19	EXHIBIT NO. S6
CITY OF TITUSVILLE, FLORIDA	SCALE: NTS	SHT. 1 OF 1



FOR SITE TEE/INSPECTION TEE CLEANOUT IN PAVEMENT

NOTE:PLUMBER IS TO CONNECT TO LOWER PORTION OF TEE ONLY (AS SHOWN). NO CONNECTION WILL BE MADE TO VERTICAL STACK ON CLEANOUT

TYPICAL INSPECTION TEE/ CLEAN OUT CONNECTION	DEPARTMENT OF WATER RESOURCES	
	DATE: 01/19	EXHIBIT NO. S7
CITY OF TITUSVILLE, FLORIDA	SCALE: NTS	SHT. 1 OF 1



NOTE: SEE CITY OF TITUSVILLE SPECIFICATIONS FOR MIN./MAX. DEPTH OF GRAVITY MAIN.

TYPICAL SEWER SERVICE CONNECTION	DEPARTMENT OF WATER RESOURCES	
	DATE: 01/19	EXHIBIT NO. S8
CITY OF TITUSVILLE, FLORIDA		SHT. 1 OF 1

City of Titusville

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No.	Revision	Date
	AS, WILL, KM, TLO,	1-11-19
	AS	5-11-22

SANITARY SEWER DETAILS AND SPECIFICATIONS

WATER RESOURCES DEPT.	1 of 2
May 2022 DATE	
N.T.S. SCALE	SHEET

5.0 SEWER AND FORCE MAIN DESIGN AND CONSTRUCTION STANDARDS

5.1. The COT will approve plans for new sewage collection and transmission systems and extensions only when designed as separate systems in which precipitation, runoff, groundwater and other prohibited discharge types are excluded, as specified in the City of Titusville Code of Ordinances Section Sec. 21-101. Prohibited Discharge Standards.

5.2. Sanitary sewer and sewage transmission systems shall be designed for the estimated ultimate tributary wastewater flows, based on acreage density as delineated in the City of Titusville Sanitary Sewer Master Plan (latest edition).

5.3. When a Developer desires to construct a project in phases, a master development plan is required and the wastewater system shall be designed for the estimated ultimate build out, as approved by the COT.

5.4. Sewage transmission force mains shall not connect to gravity manholes except as approved in accordance with section 5.18.1 of this document.

5.5. If a sanitary sewer or sewage transmission force main is located adjacent to a road right-of-way, a minimum fifteen (15) foot additional easement shall be provided. Additional easement widths shall be provided at the discretion of the City based on the depth of the pipe.

5.6. DAILY FLOWS: Average daily sewer flow shall be calculated by referencing the Equivalent Residential Connection (ERC) flow rates as outlined in the City of Titusville Land Development Regulations (LDR) Sec. 63-133. In addition, the Water Resources department's "Water Demand, Meter Sizing and Sewer Demand Calculations" sheets shall be completed and submitted.

5.7. Peak flow demands shall be based on the following:

Flow Range (ADF)	Peak Factor
0 to 0.100 MGD	4.0
0.101 to 0.250 MGD	3.5
0.251 to 1.000 MGD	3.0
1.001 to 4.000 MGD	2.5

5.8. If the above design criteria is not used, the Project Engineer will be required to submit signed, sealed and dated design calculations with the plans for sanitary sewer projects, with sufficient detail to show that the sanitary sewers will provide sufficient cleansing velocity at peak flow to avoid creation of septic conditions resulting in the formation of hydrogen sulfide, as well as have sufficient hydraulic capacity to transport all design flows.

5.9. MINIMUM COVER: The minimum cover over sanitary sewer and sewage transmission force mains shall be no less than thirty (30) inches, calculated from the finished grade. In special cases, any gravity main less than thirty (30) inches deep shall be ductile iron pipe, but at least twenty-four (24) inches.

5.10. SLOPE

5.10.1. All sanitary sewers shall be designed and constructed to give minimum velocities at the ultimate designed capacity of not less than 2.0 feet per second (fps) nor greater than 10 fps based on Manning's formula using an "n" value of 0.012 for PVC and 0.013 for other pipe materials. The following minimum slopes shall be provided:

Sanitary Sewer Size (in.)	Minimum Slope Tolerances
8	0.40%
10	0.28%
12	0.22%
15	0.17%
18	0.12%
21	0.10%
24	0.08%
27	0.07%
30	0.06%
36	0.04%

5.10.2. Approval of slopes less than those shown above will only be considered if the Project Engineer provides detailed calculations showing the velocity attained at minimum, average and peak flow conditions and where the depth of flow will be 0.3 times the diameter or greater for design average flow.

5.10.3. Sanitary sewers shall be laid with uniform slope between manholes.

5.11. FUTURE EXTENSIONS

5.12.1 All sanitary sewer extensions for future connections shall terminate at a manhole.

5.12. VALVES: On straight run force mains valves shall be placed no more than 800 feet (same as water) apart and at intersections, or as determined by the Water Resources Department. Additional valve placement at the right-of-way for isolation operation or maintenance purposes may be required by the Water Resources Department.

5.13. MANHOLES

5.13.1. Manholes shall be installed at distances no greater than every 400 feet, at all changes in grade, size or alignment, at all sewer intersections, and at the end of each sanitary sewer line.

5.13.2. Manholes shall be constructed of precast reinforced concrete sections and shall conform to ASTM C478 and ASTM C76 specifications. The base section of the manhole shall be monolithic.

5.13.3. Manholes will be eccentric.

5.13.4. The casting shall be fully bedded in mortar with adjustment brick courses placed between the frame and manhole. Bricks shall be a maximum of five (5) courses. The brick shall be solid, sound, hard and uniform in size, meeting the requirements of ASTM standard specification for sewer brick designation C-32, grade MM. All manholes must have an APM I&I barrier sealed to the manhole cone prior to raising to grade to prevent infiltration. Install and adjust I&I Barrier as required per manufacturer specifications. See Appendix A for approved vendor list.

5.13.5. Mortar shall be composed of one part Portland cement (ASTM C150, Type II) and two parts washed silica sand (ASTM C144). No lime shall be used.

5.13.6. The top of manhole castings located in pavement, shouldered areas, and sidewalks shall be set flush with grade. The top of manhole castings located outside these areas shall be placed three (3) inches above grade and surrounded with a concrete pad that slopes down to ground level.

5.13.7 After curing, and before the installation of the I&I barrier, as manufactured by either GPT Riser Wrap Enpro industries or Wraped Seal, Canusa-CPS, The Woodlands, TX, the plaster shall be carefully checked for bond and soundness by being tapped. Unbonded or unsound plaster shall be removed and replaced.

5.13.8 Residential sanitary sewer manholes shall have all interior surfaces coated with two coats of red-gray acrylic epoxy ConSeal CS-55 paint, including adjusting bricks, bench, and inverts. Each coat shall have a dry film thickness of 8-mils for a total of 16-mils dry. There will be no inside exposed raw concrete.

5.13.9 Commercial or industrial sewer manholes shall have a fiberglass liner. See the City's approved vendor list for acceptable materials. Depending on the operating conditions, the City may require additional liners in downstream manholes.

5.13.10 The exterior shall be coated with two coats of ConSeal CS-55. Each coat shall have a dry thickness of 3.8 mils.

5.13.-11 WrapidSeal®, GPT Riser Wrap or Water Resources Department approved equal, must be used on all joints. WrapidSeal® and GPT riser wrap must be used in accordance with manufacturer's recommendations. Wraps for manholes and lift stations must be at a minimum of 11 inches in width.

5.13.12 For sanitary sewer mains ten (10) inches in diameter and smaller, the minimum inside diameter of manholes shall be forty-eight (48) inches. A minimum access lid diameter of twenty-seven (27) inches shall be provided. For sanitary sewer mains greater than ten (10) inches in diameter the minimum manhole inside diameter shall be five (5) feet.

5.13.13 Manholes twelve (12) feet or deeper, shall be five (5) feet in diameter with a six (6) inch wall thickness.

5.13.14 Where the difference in elevation between the incoming sewer invert and the manhole invert is less than twenty-four (24) inches, the manhole invert shall have a built-up flow channel from the higher invert to the lower invert to provide a smooth flow transition and prevent solids deposition.

5.13.15 The flow channel through manholes shall be made to conform in shape and slope to that of the connecting sanitary sewer main.

5-13.16 Flow direction changes in excess of ninety (90) degrees shall not be included in sanitary sewer alignments without special consideration. Minimum flow line elevation drop of 0.1 feet across manholes shall be provided.

5.13.17 A bench, constructed of Type II Portland Cement mortar at least two (2) inches thick over brick, shall be provided, which shall have a minimum slope of two (2) inches per foot.

5.14. DROP MANHOLES

5.14.1 Drop manhole connections shall be used on an incoming sanitary sewer whenever the invert of the incoming sanitary sewer is at least two (2) feet higher than the outgoing sanitary sewer invert.

5.14.2 Drop manhole connections shall be constructed as shown in the City standard detail on Sheet COT-SS1.

5.14.3 All drop manholes shall be external only.

5.15. SEWER LATERALS

5.15.1 All service laterals and fittings shall be a minimum of six (6) inches in diameter and are not to exceed seventy five (75) feet in length as measured from the sewer main or terminus manhole, and shall be of the same material as that specified for the trunk sanitary sewer (i.e., ductile iron or PVC).

5.15.2 Double and multiple (manifold) service wyes are not allowed. All service laterals must be single service laterals directly connected to either a sanitary sewer main or a terminal manhole.

5.15.3 All laterals to single-family residential lots shall be centered on the lot.

5.15.4 Each lateral shall be supplied with a wye fitting and a forty-five (45) degree bend at the main and laid at a minimum slope of one (1) percent.

5.15.5 The depth of the lateral at the property line shall be at least thirty (30) inches and not greater than four (4) feet.

5.15.6 The ends of the laterals shall be securely sealed with a factory manufactured watertight cap.

5.15.7 An inspection/site tee shall be required at the property line. See the City's "Typical Sewer Service Connection", (Appendix D, Detail S-8).

5.15.8 All laterals located within driveways are to have traffic bearing inspection tee covers.

5.15.9 Service laterals shall not be allowed to discharge directly into sanitary manholes except at the invert of terminal manholes. A maximum of three (3) laterals are allowed in terminal manholes.

5.15.10 Curbs are to be etched with the letter "S", three (3) inches in height, to designate the location of the sewer lateral. The curb etching should be painted green for wastewater.

5.15.11 Any party who desires to build on privately owned property shall be required to expose and install a water-tight cap or plug on any existing lateral(s) that will not be connected to a building, and shall request the City to inspect the unused lateral prior to covering. Sewer lateral abandonments are to be cut and capped at right-of-way line and inspected by building department. Any abandoned lines will be as-builted and have a marker (EMS) provided.

5.16. ELECTRONIC PIPE MARKER (EMS)

5.16.1 The 3M™ EMS 1258 as manufactured by Minnesota Mining and Manufacturing Company, or COT approved equal, shall be placed eight (8) inches over the end of every lateral within the right-of-way in a level position and over other sewer facilities as required.

5.17 CONNECTIONS TO EXISTING SEWAGE SYSTEMS

5.17.1 Force Main Connections: Force mains shall not terminate directly into a sanitary sewer line. Force mains shall connect directly to force mains. Connection of a force main to a sanitary sewer system may be approved only when the Project Engineer demonstrates to the satisfaction of the City that a force main connection is not feasible. Any such requests shall be submitted to the City and approved by the COT, and shall include the following design considerations:

5.17.1.1 Detailed construction plans must include plan and profile details of the excavation, connection, backfilling and restoration.

5.17.1.2 The receiving manhole, two (2) downstream manholes, and one (1) upstream manhole shall be lined with a COT approved liner.

5.17.2 Sanitary Sewer or Force Main Connections: The City shall inspect the receiving wastewater pump station to determine if it has capacity for additional flows. Any required upgrades shall be the responsibility of the Developer.

5.17.3. Connection of Private Sanitary Sewer Systems: Private sanitary sewer systems must be separated from the City sanitary sewer system by a manhole located at the right-of-way line. If the manhole separating the private system from the public system is required to be located on private property, a twenty (20) foot wide easement centered on the manhole will be required.

5.18. SANITARY SEWER SYSTEM CONNECTIONS

5.18.1 Sanitary sewer mains connecting to other sanitary sewer mains shall include the installation of a new manhole added to an existing sanitary sewer main and shall be constructed of precast concrete and remain plugged until FDEP clearance. The backfilling around the new base shall be performed and compacted in such a manner that the existing sanitary sewer pipe is adequately supported and protected from settlement of adjacent or nearby backfill.

5.18.2 No doghouse or mouse hole manholes are allowed.

5.18.3. Connection to an existing manhole shall be made by core drilling the manhole and utilizing a Kor-N-Seal® flexible pipe to manhole connector as manufactured by NPC, Inc., Milford, NH, or COT approved equal. The condition of the existing manhole will be evaluated by the City prior to approval of the connection and any repairs or upgrades to the manhole will be the responsibility of the developer as part of the conditions of approval of the connection.

5.19. OWNERSHIP

5.19.1. Single-family subdivision sanitary sewer systems shall be owned and maintained by the City.

5.19.2. Privately owned systems that connect to the City sewage system shall meet City standards for the connection in the right-of-way and must be approved by the Water Resources Department.

5.19.3. If an Owner/Developer wants to keep a system private, they must submit a written request to the City prior to submitting an FDEP Application Permit Package. The Owner/Developer will be advised in writing by the COT. If a private system is to be given to the City, all City standards must be met, including the most current City standards, prior to acceptance.

5.19.4. If the property will not remain under single ownership, the Owner/Developer shall provide documentation that the private sewage system is specifically included as the maintenance responsibility of the owners.

5.19.5. If a proposed utility system will connect to a privately-owned utility system to obtain service, the Developer shall obtain a contractual agreement with the Owner of the existing system, providing perpetual rights to service through the property. An executed agreement shall be submitted to the City with the plans.

5.19.6. It is the responsibility of the Owner/Developer to obtain the necessary easements for private sewer lines. Private sewer lines shall not be installed in public easements or rights-of-way.

5.20 No sanitary sewer main conveying wastewater shall be less than eight (8) inches in diameter nor shall any City owned force main be less than four (4) inches in diameter.

5.21 FORCE MAIN TESTING AND INSPECTION:

5.21.1 All force mains shall be pressure and leakage tested in conformance with the requirements of Section 13- Hydrostatic tests of AWWA Specifications C600 using a hydrostatic gauge pressure of 100 PSI.

5.21.2 No force main will be acceptable to the City unless the leakage is less than the amounts determined by the following formula:

$$L = \frac{S \times D \times P^{0.5}}{148{,}000}$$

L = Testing Allowance (quantity of makeup water) in gallons per hour.
S = Length of line being tested, in feet.
D = Nominal internal diameter (in inches) of the pipe.
P = The average test pressure during the pressure test, in pounds per square inch (gauge). This actual pressure shall be determined by finding the difference between the average elevation of all tested pipe joints and the elevation of the pressure gauge and adding the difference in elevation head to the authorized test pressure.

Note: This table is based upon an allowable leakage of 23.3 GPD per mile of pipe per inch of nominal diameter for mechanical and push-on joints.

5.21.2.1 Polyvinyl chloride (PVC) pipe force mains shall be tested in general, the same as ductile iron force mains, and specifically in accordance with the testing requirements as established by the pipe manufacturer.

5.21.2.2 No force mains will be accepted by the City unless the leakage is less than the amounts determined by the formula above; or, less than the maximum allowable leakage requirement established by the pipe manufacturer, whichever of the leakage requirements is more stringent shall apply.

5.22 TEST AND INSPECTION:

5.23 All newly installed and modified sanitary sewer systems will be tested by the Contractor utilizing the following tests and video inspections. The Contractor shall perform testing of all sanitary gravity sewers, as set forth in the following, and shall conduct said tests in the presence of City of Titusville personnel with a minimum of two (2) business days advance notice provided. All newly installed and modified sanitary sewer systems shall remain plugged until Department of Environmental Protection (DEP) clearance.

5.24 LEAKAGE TESTING

5.24.1 Air testing can be requested at the City discretion. Testing will conformed with 10 psi for a period of 5 minutes. The air test, if used, shall be conducted in accordance with one of the following Standards:

5.24.1.1 ASTM F1417, "Standard Test Method for Installation Acceptance of Plastic Gravity Sewer Lines Using Low-Pressure Air."

5.24.1.2 UNI-B-6, "Recommended Practice for Low-Pressure Air Testing of Installed Sewer Pipe," published by the Uni-Bell PVC Pipe Association.

5.24.2 If the test section does not pass the test as defined in the above Standards, the Contractor shall repair or replace all defective materials and/or workmanship at no additional cost to the City.

5.24.3 If the installation fails to meet these requirements, the Contractor shall, at no additional cost to the City, determine the source of leakage, make necessary repairs or replacements, and retest the failed section(s).

5.25 CLOSED CIRCUIT TELEVISION (CCTV) INSPECTION

5.25.1 After completion of the pipe installation and all backfill and base work is compacted and has passed density testing, the Contractor will perform a video inspection of the sanitary sewer pipe(s). The following procedures will be followed:

5.25.2. The Contractor shall be required to use a pan and tilt color camera.

5.25.3. At the beginning of the inspection, the Contractor is to announce the name of the company performing the video inspection work, the operator name, date, project, street, manhole number(s), length of sections of pipe, length of total run footage, the size and type of pipe material, weather conditions (sunny, raining, etc), and the purpose of the inspection.

5.25.4. Each run is to include audio commentary with the street, manhole number(s), length of total run, and is to include an accurate ongoing footage counter that displays on the monitor the exact distance of the camera (to the nearest tenth of a foot) from the centerline of the starting manhole.

5.25.5. All video inspection runs are to begin at the center of the upstream manhole, and shall be continuous.

5.25.6. As the video inspection progresses, the Contractor shall make audio and video log recordings of any defects, sags or low points in the pipe, service connections/laterals, point repairs, and joint misalignments, and shall include station numbers.

5.25.7. The camera operator shall slowly pan and tilt at each service connection, visible defect, and at pipe material transitions.

5.25.8. Noted defects shall be documented with numbered color digital files (.jpg) and color hard copy print-outs submitted with the inspection report. A sample inspection report with the minimum required information and a classification table for reporting observations is included in the exhibits.

5.25.9. The determination of a defined defect is at the sole discretion of the City. Defined defects include, but are not limited to, cracks, broken or defective pipe, pipe misalignment, vertical sags, or deviations from true grade alignment. The Contractor shall be required to repair or replace identified deficiencies.

5.25.10. Upon completion of all required repairs, the Contractor will again perform an internal video inspection of the sanitary sewer pipe to verify that the repairs meet the specifications.

5.25.11. Prior to repair or replacement of defective workmanship or material, the method of repair or replacement shall be submitted to the City for review and approval.

5.25.12. Acceptance of the CCTV inspection of the sanitary sewer main shall be given by the City in writing only after all defects have been corrected, retested and inspected to the satisfaction of the City. Approval from the COT stating that the CCTV is acceptable is required before an FDEP Sewer Clearance Request form will be signed by the COT and forwarded to the FDEP.

5.26 PIPE CLEANING

5.26.1 Prior to the video inspection, the Contractor must clean all sanitary sewer lines. If sand/debris is encountered upon CCTV inspection contractor required to reclean and resubmit new CCTV footage.

5.26.2 Debris shall not be allowed to enter any pump station, wet well, or any portion of the existing sanitary sewer system. Any such debris shall be removed from the sanitary sewer system.

5.27 MANHOLE INSPECTION

5.27.1 No visible leakage in the manhole or pipe connections will be permitted.

5.27.2. Manholes shall also be vacuum tested at the discretion of the City. The vacuum test shall pass if the vacuum remains at 10" Hg or drops to 9" Hg in a time greater than one minute. If the manhole fails the initial test, the Contractor shall locate the leak and make proper repairs.

5.27.3. All manholes failing to meet specifications, whether visual or vacuum, shall be reconstructed or replaced by the Contractor. Pressure grouting and lining of manholes may be allowed on a case-by-case basis at the discretion of the COT.

5.28 SUBMITTALS

5.28.1. The Contractor shall submit to the City one digital file of the CCTV inspection, one digital copy of each sheet of the inspection report, and one digital file of a schematic plan of the inspected sanitary sewer system.

5.28.2. At the sole discretion of the City, if the digital file presented for review is found to be of poor quality (i.e. dim lighting, grainy and/or foggy picture, inconsistent data, speed of run distracts from inspection, or dry pipe) the CCTV inspection will be rejected and shall be performed again.

City of Titusville
555 South Washington Avenue
Titusville, Florida 32796
PH: (321) 383-5823 Fax: (321) 383-5700

CITY OF TITUSVILLE STANDARD DISCLAIMER FOR SPECIFICATIONS AND DETAIL DRAWINGS

The City of Titusville provides these drawing details and specifications for informational purposes only and makes no claims as to their suitability for use for any purposes.

USE OF THESE DETAILS AND SPECIFICATIONS (INCLUDING DESIGN AND DIMENSIONS) MUST BE CHECKED BY THE USER'S ENGINEER ENSURING ADEQUACY FOR THE INTENDED USE.

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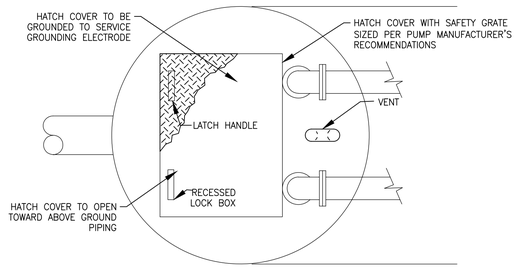
Changes to any City of Titusville detail or specification is expressly prohibited without the written approval from the City of Titusville. Any authorized change must be clearly identified with a revision cloud noting revision dates. Any authorized revision must be accompanied by a revision approval letter by the City of Titusville.

Any detail that is not required for the specific development that these details have been included in the permit set maybe crossed out on this drawing sheet but may not be removed. No additional detail and or specification may be added to this drawing sheet.

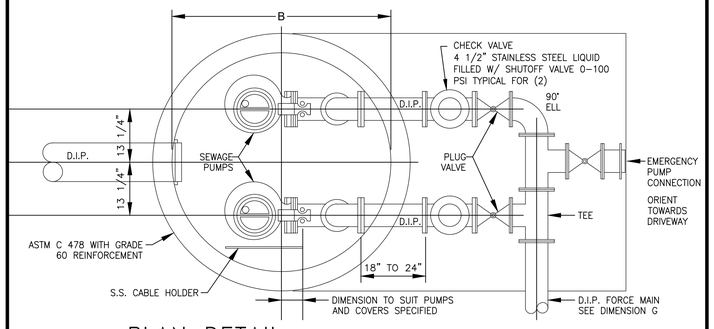
No.	Revision	Date
	AS,WM, KM, TLO	1-15-19
	AS	5-11-22

SANITARY SEWER DETAILS AND SPECIFICATIONS

WATER RESOURCES DEPT.	2 of 2
May 2022 DATE	
N.T.S. SCALE	SHEET

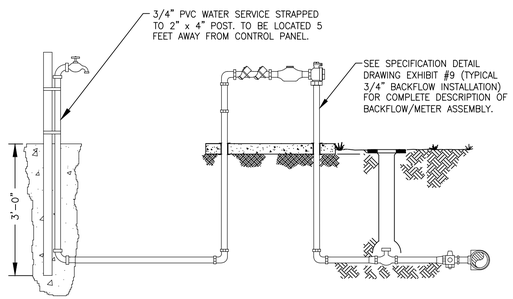


HATCH DETAIL N.T.S.

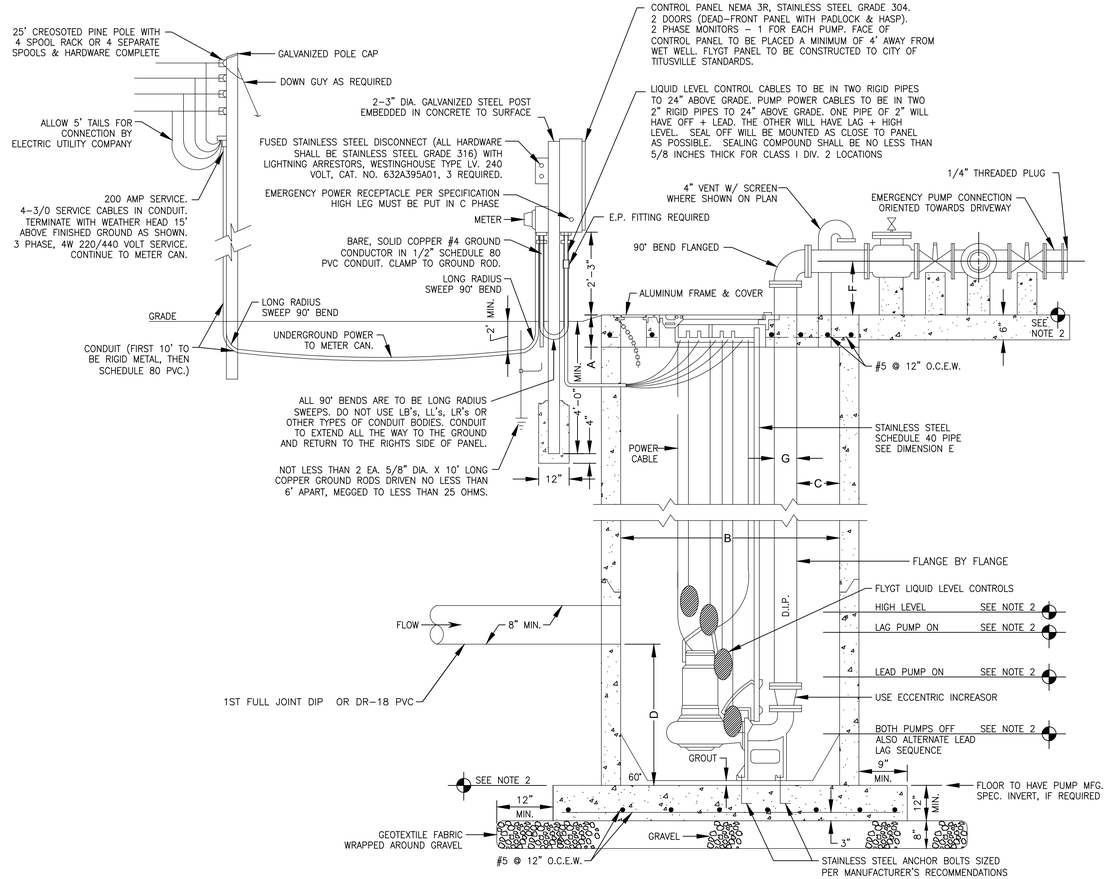


PLAN DETAIL N.T.S.

SEE SPECIFICATION DETAIL DRAWING EXHIBIT #E3
(TYPICAL CITY STANDARD WASTEWATER PUMP STATION DETAILS LIFT STATION SITE PLAN)



SECTION DETAIL N.T.S.



SECTION N.T.S.

NOTES:

1. ALL GUIDE RAILS, SAFETY HOOKS, CHAINS NUTS, BOLTS, HARDWARE & TRIM WITHIN WET WELL SHALL BE STAINLESS STEEL GRADE 316 UNLESS SPECIFIED OTHERWISE.
2. ELEVATION PER ENGINEER AND SITE SPECIFIC CONDITIONS.
3. PUMPS 50 HP OR LARGER - ELECTRICAL CONDUIT SHALL BE 3" OR LARGER.
4. TOP OF WET WELL TO BE 1' ABOVE CROWN OF ROAD.
5. PUMPS 20 HP OR LARGER SHALL HAVE A 6" POURED CONCRETE BENCH.
6. FIRST FULL JOINT OF PIPE IN LIFT STATION SHALL BE 401 PROTECTO DIP OR DR-18 PVC.

DIMENSION	MORE THAN 10,000 GPD	LESS THAN 10,000 GPD
A	8" *	8" *
B	8'-0" MIN.	6'-0"
C	6" MIN.	4" MIN.
D	7'-0" MIN.	5'-0" MIN.
E	3" MIN.	2" MIN.
F	24" TO CENTER LINE HEIGHT OF CV ASSEMBLY.	
G	4" MIN.	4" MIN.

* PER PUMP MANUFACTURER AND MAINTENANCE REQUIREMENTS.

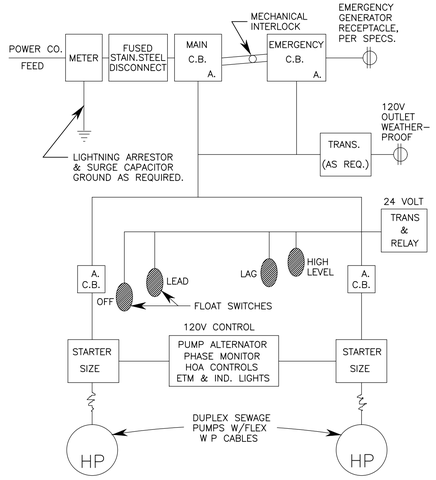
TYPICAL CITY STANDARD WASTEWATER PUMP STATION DETAILS

City of Titusville
2836 Singleton Avenue
Titusville, Florida 32796
PH: (321) 383-5667 Fax: (321) 383-5653

No.	Revision	Date
	AS, WILL, KM, TLO,	1-10-19
	AS	5-6-22

LIFT STATION DETAILS AND SPECIFICATIONS

WATER RESOURCES DEPT.	1 of 2
May 2022 DATE	
N.T.S. SCALE	SHEET



ELECTRICAL RISER DIAGRAM N.T.S.

(PER CITY WRITTEN SPECIFICATIONS)
(ALL PER NEC CODE LATEST REVISION)
(LIFT STATIONS ARE CLASS I DIVISION 2)

LOAD SCHEDULE

SERVICE	V,3o,4W
PUMP NO.1 (H.P.)	F.L.A.
+25% OF A.	xxxxx A.
PUMP NO.2 (H.P.)	A.
MISC. CONTROL LOAD	A.
IMPELLER NO.	
	AMPS
SERVICE-3# THHN &	
1# THHN NEUTRAL	
ALL WIRING TO BE COPPER	

PUMP SPECIFICATIONS

PUMPS REQUIRED	2
MODEL NO.	
PUMP SIZE (3" SOLIDS MIN.)	
CAPACITY EACH (GPM)	GPM
TOTAL HEAD (TDH)	FT.
IMPELLER NO.	
MOTOR H.P. REQUIRED	H.P.
SPEED (RPM)	RPM
ELECTRICAL REQUIRED 3o	V.

GENERAL NOTES:

1. ALL CONSTRUCTION SHALL CONFORM TO CITY OF TITUSVILLE AND SOUTHERN BUILDING CODES, LATEST REVISIONS.
2. THE CONTRACTOR SHALL VERIFY ALL INFORMATION SHOWN PRIOR TO CONSTRUCTION, AND ANY DISCREPANCY SHALL BE REPORTED TO THE ENGINEER AND WATER RESOURCES DIRECTOR.
3. CONCRETE SHALL HAVE NOT LESS THAN 3,000 P.S.I. COMPRESSIVE STRENGTH AT 28 DAYS. PRECAST CONCRETE SHALL BE 4,000 P.S.I. CLASS II MINIMUM (TYPE II CEMENT ONLY), WITH APPROPRIATE DOCUMENTATION FOR BUILDING OFFICIAL.
4. REINFORCING STEEL SHALL CONFORM TO A.S.T.M. SPEC. A-615, AND SHALL BE DEFORMED ACCORDING TO A.S.T.M. SPEC. 305.
5. ALL PIPING AND FITTINGS SHALL BE DUCTILE IRON, FLANGED JOINTS UNLESS NOTED OTHERWISE.
6. ALL PIPE OPENINGS SHALL BE CAST AT TIME OF FABRICATION.
7. SEWAGE PUMPS SHALL BE: ITT WATER & WASTEWATER FLORIDA, LLC, SUBMERSIBLE, FM RATED ON RAIL SYSTEM.
8. SHOP DRAWINGS FOR COMPLETE LIFT STATION SHALL BE SUBMITTED TO THE WATER RESOURCES DEPARTMENT FOR APPROVAL PRIOR TO ORDERING ANY MATERIALS OR EQUIPMENT OR BEGINNING ANY CONSTRUCTION.
9. A BAKELITE PLAQUE, MOUNTED ON THE ELECTRICAL ENCLOSURE, SHALL BE PROVIDED FOR CITY OWNED STATIONS CONTAINING THE FOLLOWING INFORMATION:
   CITY OF TITUSVILLE
   NAME OF STATION:_____
   SEWAGE LIFT STATION NO._____
   PLEASE REPORT ANY OVERFLOWS
   CALL: TEL. NO. 321-615-8398
   PLAQUE IS TO BE NOT SMALLER THAN FORTY TWO (42) SQUARE INCHES WITH WHITE ENGRAVED LETTERS ON A BLACK BACKGROUND.
10. ALL UNSUITABLE MATERIAL SHALL BE REMOVED WITHIN THE LIMITS OF CONSTRUCTION.
11. PIPING SHALL BE COATED INSIDE AND OUTSIDE WITH TWO (2) COATS EACH KOPPERS BITUMASTIC NO. 300-M; MINIMUM DRY FILM THICKNESS 18 MILS.
12. WET WELL LINERS OR COATINGS WILL BE REQUIRED ON ALL CONCRETE WET WELLS OR IN MANHOLES THAT RECEIVE FORCE MAIN DISCHARGES. THE FOLLOWING WET WELL LINERS OR COATINGS ARE CITY OF TITUSVILLE APPROVED:
    GSE STUDLINER AS MANUFACTURED BY GUNDLE/SLT ENVIRONMENTAL, INC., 19103 GUNDLE ROAD, HOUSTON, TX 77073, OR CITY APPROVED EQUAL.
    THE WET WELL LINERS OR COATINGS MUST BE INSTALLED, TESTED AND INSPECTED AFTER INSTALLATION PER MANUFACTURER'S RECOMMENDATION BY MANUFACTURER CERTIFIED APPLICATORS. THE LINER OR COATING SYSTEM MUST EXTEND AND SEAL ONTO WET WELL HATCH FRAME, AROUND PIPE OPENINGS AND ANY OTHER PROTRUSIONS, TO PREVENT CONTACT OF WET WELL STRUCTURE FROM CORROSIVE SEWER GASES. WHERE NO CORROSIVE CONDITIONS ARE EXPECTED IN A WET WELL OR MANHOLE, WITH WATER RESOURCES SPECIFIC WRITTEN APPROVAL, THE INTERIOR OF THE MANHOLE OR WET WELL MAY BE COATED WITH TWO (2) COATS COAL TAR EPOXY TO A MINIMUM THICKNESS OF 18 MILS.
13. CONTRACTOR SHALL TAKE PRECAUTIONS AGAINST FLOTATION OF THE WET WELL DURING CONSTRUCTION.
14. EMERGENCY GENERATOR RECEPTACLE: CROUSE-HINDS AR 2042, ANGLE TYPE, WITH SPRING LOADED WEATHERPROOF CLOSURE, 5 POLE, 200 AMP.
15. ALL EXPOSED DISCHARGED METAL PIPING SHALL BE PAINTED WITH ONE (1) COAT OF HIGH QUALITY METAL PRIMER AND TWO (2) COATS OF EXTERIOR ENAMEL PAINT.
16. BASE AND FIRST RISER UNIT TO BE CAST MONOLITHIC.
17. PRESSURE GAUGE (LIFT STATIONS 10,000 GPD OR GREATER): STAINLESS STEEL, LIQUID FILLED, WITH STAINLESS STEEL DIAPHRAGM, 4 1/2" DIAL AND RANGE FROM 0-100 P.S.I. GAUGE SHALL BE ASHCROFT OR APPROVED EQUAL.
18. ALL LOCATIONS WHERE PIPES ENTER OR LEAVE THE WET WELL SHALL BE MADE WATERTIGHT WITH "LINK-SEALS" AND EMBECO GROUT, RUBBER "BOOT" WITH S.S. HARDWARE OR OTHER CITY APPROVED METHOD.
19. THERE SHALL BE NO VALVES OR ELECTRICAL JUNCTION BOXES IN THE WET WELL.
20. WET WELL COVERS SHALL BE ALUMINUM WITH STAINLESS STEEL TYPE 316 HARDWARE AND RECESSED LOCK AS SUPPLIED BY SYRACUSE CASTINGS OR APPROVED EQUAL, SIZE AS REQUIRED BY PUMP MANUFACTURER. WET WELL COVER SHALL INCLUDE AN ODOR SUPPRESSION GASKET AND AN ITT SAFE-HATCH SYSTEM.
21. WATER METERS AND BACKFLOW PREVENTERS SHALL MEET THE REQUIREMENTS OF THE CITY OF TITUSVILLE WATER RESOURCES DEPT.
22. PLUG VALVE SHALL BE ECCENTRIC TYPE, DEZURIK OR APPROVED EQUAL.
23. SITE DRAWING SHALL INCLUDE FENCING AND GROUND COVER, PER SPECIFICATIONS.
24. LIFT STATIONS TO BE OWNED AND OPERATED BY THE CITY SHALL BE LOCATED ON A SITE APPROVED BY AND DEEDED TO THE CITY.

TYPICAL CITY STANDARD WASTEWATER PUMP STATION DETAILS

6.0. LIFT STATION DESIGN AND CONSTRUCTION STANDARDS

6.1. GENERAL

6.1.1. All wastewater pumping stations shall be designed in accordance with the applicable regulations of the City, the Florida Department of Environmental Protection (FDEP), and the standards established herein. In addition, all wastewater pumping stations shall be designed and constructed for a serviceable life of not less than 50 years.

6.1.2. FLOOD PROTECTION: Wastewater pump stations shall be designed to remain fully operational and accessible during the 100-year flood. The top elevation of the wet well shall be six (6) inches or higher above the 100-year flood elevation or the elevation of the crown of the road, whichever is greater.

6.1.3. PUMP CURVES: Calculations provided shall include head capacity curves plotted on copies of the manufacturer's pump curves, hydraulic analysis of the force main system, buoyancy calculations and operating cycle calculations with wet well sizing. Head capacity curves shall be prepared and submitted to the City of Titusville along with the pump station plans. Head capacity curves shall verify that the pumps are operating at peak efficiency and are suitable for the design flow application.

6.1.4. SITE CONSIDERATIONS: Soil borings are to be performed at the location of the wet well extending at least five (5) feet below the bottom of the wet well. A licensed engineer in the State of Florida will be required to make construction recommendations addressing dewatering, bedding, compaction, and backfilling for the wet well construction. The construction plans need to incorporate the Engineer's construction recommendations.

6.1.5. PUMP DESIGN: Pumping levels shall be set to provide a minimum capacity between operational water levels sufficient to allow a minimum of ten (10) minutes between successive starts of the pumps during peak flow events. The pump station shall be constructed as shown on the approved plans and shall comply with all manufacturers' installation recommendations. All pump stations shall be submersible type.

6.1.6. Pressure tests can be provided by the City of Titusville for a fee. As an alternative, a third party testing company may be hired at the developer's expense to do a pressure test. If a third party is elected, the City of Titusville must be present for the testing.

6.1.7. GENERATORS: An on-site generator shall be required on any station with a a 20 HP pump or larger. Additionally, if the City deems the lift station is critical, is regional, or the station is located at a remote site, a generator shall be required. The generators installed shall be in compliance with the City of Titusville Technical Specifications for the Installation of Stationary Skid-Mounted Generators. No lift stations are allowed near river areas.

6.2. PUMPS AND MOTORS

6.2.1. UNIT INTEGRITY: In order to ensure unit integrity, the pumps, motors, control panel, access covers, and guide rail system shall be supplied by the same company. The City of Titusville utilizes Flygt or ABS Pumps.

6.2.2. PUMP RATING: Pumps are to comply with the National Electrical Code (NEC) requirements for Class I Group D, Division 1 locations, in accordance with Section 42.35 of the Recommended Standards for Wastewater Facilities (1997) as adopted by FDEP rule 62-604.300(5)(g). F.A.C. Equipment will be certified as such by one of the national rating agencies (Factory Mutual or Underwriters Laboratory).

6.2.3. PUMP TESTS: The Flygt or ABS pump Supplier shall perform the following tests on each pump before shipment:

6.2.4. Meg the pump for insulation breaks or moisture.

6.2.4.1. Prior to submergence, the pump shall be run dry and be checked for correct rotation.

6.2.4.2. Pump shall be run in a submerged condition.

6.2.4.3. Pump shall be removed from test tank and meggered immediately for moisture.

6.2.4.4. A written certified test report giving the above information shall be supplied with each pump at the time of shipment.

6.2.4.5. The ends of the pump cables will be fitted with a rubber shrink fit boot to protect the cable prior to electrical installation.

6.3. GUARANTEED PARTS STOCK PROGRAM

6.3.1. The Flygt or ABS pump supplier shall have a guaranteed parts stock program in the State of Florida. These parts shall include at least one set of spare parts as listed below for each pump supplied on this contract. If the Flygt or ABS pump supplier does not have a published guaranteed part stock program, the contractor shall furnish the specified spare parts for each pump.

a. Upper Mechanical Seal
b. Lower Mechanical Seal
c. Wear Rings
d. Cable Entry Washer/Grommet
e. Inspection Plug Washers
f. Upper Bearing
g. Lower Bearing
h. Complete set of O-Rings
i. Impeller Bolt
j. Impeller Key
k. Motor Cable

6.4 The Flygt or ABS pump supplier shall have a service facility within a fifty (50) mile radius of Titusville, Florida. A factory trained service technician shall be available 24 hours a day, 365 days a year.

6.5 WARRANTY: The Flygt or ABS pump manufacturer shall warrant the pumps being supplied against defects in workmanship and materials for a period of five (5) years under normal use, operation, and service. The warranty shall be in published form and apply to all similar units.

6.6 NUMBER OF PUMPS: Each pumping station shall have a minimum of two (2) pumps for peak flows of one thousand (1,000) gallons per minute (GPM) or less. When the flow exceeds 1,000 GPM, three (3) or more pumps will be required. Standby pumping capability shall be provided such that if any one pump is out of service the remaining pumps shall be capable of pumping out estimated peak flows.

6.7 PUMP SELECTION: Pump stations shall be capable of pumping the peak design flow with only one pump operational. Pumps shall be capable of meeting all system hydraulic conditions without overloading the motors. In addition, a minimum five (5) HP motor shall be required unless otherwise approved by the COT, to be determined on a case-by-case basis. In cases where receiving force main systems are interconnected to additional pumping stations, pump and motor selection and head capacity curves shall reflect hydraulic conditions. All pumps must be a minimum 4 inch base and volute.

6.8 PUMP DESIGN: The pumps shall be automatically and firmly connected to the discharge connection, guided by two stainless steel guide bars extending from the top of the station to the discharge connection. There shall be no need for personnel to enter the wet well. A machined watertight contact shall accomplish sealing of the pumping unit to the discharge connection. Sealing of the discharge interface with a diaphragm, O-ring or profile gasket will not be acceptable. No portion of the pump shall bear directly on the sump floor.

6.9 PUMP MOTOR

6.9.1 The motor and pump shall be designed and assembled by the same manufacturer. The pump motor shall be induction type with a squirrel cage rotor, shell type design, housed in an air filled, water tight chamber, NEMA B type. The motor shall be designed for continuous duty handling of pumped media of 40°C (104°F) and capable of up to fifteen (15) evenly spaced starts per hour. The motor shall have a voltage tolerance of plus or minus ten (10) percent. The motor shall be designed for operation up to 40°C (104°F) ambient, with a temperature rise not to exceed 80°C (176°F).

6.9.2 The stator windings and stator leads shall be insulated with moisture resistant Class F insulation rated for 155°C (311°F). The stator shall be dipped and baked three times in Class F varnish and shall be heat-shrink fitted into the stator housing. The use of bolts, pins or other fastening devices requiring penetration of the stator housing is not acceptable. The rotor bars and short circuit rings shall be made of cast aluminum.

6.9.3. Thermal switches set to open at 125°C (260°F) shall be embedded in the stator lead coils to monitor the temperature of each phase winding. These thermal switches shall be used in conjunction with, and supplemental to, external motor overload protection and shall be connected to the control panel.

6.9.4. An elastomer seal shall hermetically seal the junction chamber containing the terminal board from the motor.

6.9.5. Connection between the cable conductors and stator leads shall be made with threaded compression type binding posts permanently affixed to a terminal board. Wire nuts or crimping type connection devices are not acceptable.

6.9.6. The combined service factor (combined effect of voltage, frequency and specific gravity) shall be a minimum of 1.15.

6.10. PUMP MATERIALS

6.10.1. Major pump components shall be of gray cast iron, ASTM A-48, Class 35B, with smooth surfaces devoid of blowholes or other irregularities. All exposed nuts or bolts shall be Stainless Steel AISI Type 316 construction. All metal surfaces coming into contact with the pumpage, other than stainless steel or brass, shall be protected by a factory applied spray coating of acrylic dispersion zinc phosphate primer with a polyester resin paint finish on the exterior of the pump. Epoxies, silicones, or other secondary sealing systems shall not be considered acceptable. Critical mating surfaces where watertight sealing is required shall be machined and fitted with Nitrile or Viton rubber O-rings.

6.10.2. The cable entry seal design shall abide by manufacturer torque requirements to insure a watertight and submersible seal. The cable entry shall consist of a single cylindrical elastomer grommet, flanked by washers, all having a close tolerance fit against the cable outside diameter and the entry inside diameter and compressed by the body containing a strain relief function, separate from the function of sealing the cable.

6.10.3. The assembly shall provide ease of changing the cable when necessary using the same entry seals. The cable entry junction chamber and motor shall be separated by a stator lead sealing gland or terminal board, which shall isolate the interior from foreign material gaining access through the pump top.

6.10.4. All cables must have a minimum length of forty (40) feet unless the station design requires longer length.

6.10.5. The motor and cable shall be capable of continuous submergence underwater without loss of watertight integrity to a depth of sixty five (65) feet.

6.11. PUMP COOLING SYSTEM

6.11.1. On pumps twenty (20) HP and larger, each unit shall be provided with an adequately designed cooling system utilizing a water jacket. The water jacket shall encircle the stator housing. On pumps less than twenty (20) HP, motors are sufficiently cooled by the surrounding environment or pumped media. A water jacket is not required.

6.11.2. Impeller back vanes shall provide the necessary circulation of the cooling liquid through the water jacket. The cooling media channels and ports shall be non-clogging by virtue of their dimensions.

6.11.3. Provisions for external cooling and seal flushing shall also be provided. The cooling system shall provide for continuous pump operation in liquid temperature of up to 104°F (40°C). Restrictions below this temperature are not acceptable.

6.12. PUMP MECHANICAL SEALS

6.12.1. Each pump shall be provided with a tandem mechanical shaft seal system consisting of two totally independent seal assemblies. Each seal interface shall be held in contact by its own spring system. The seals shall require neither maintenance nor adjustment and shall not depend on the direction of rotation for sealing. The seals shall operate in a lubricant reservoir that hydro-dynamically lubricates the lapped seal faces at a constant rate.

6.12.2. Each pump shall be provided with a lubricant chamber for the shaft sealing system. The lubricant chamber shall be designed to prevent overfilling and to provide lubricant expansion capacity. The drain and inspection plug, with positive anti-leak seal, shall be easily accessible from the outside. Seal lubricant shall be FDA Approved non-toxic. The seal system shall not rely upon the pumped media for lubrication. The motor shall be able to operate dry without damage while pumping under load.

6.12.3. The lower, primary seal unit, located between the pump and the lubricant chamber, shall contain one stationary and one positively driven rotating tungsten carbide seal ring. The upper, secondary seal unit, located between the lubricant chamber and the motor housing, shall contain one stationary tungsten carbide seal ring and one positively driven rotating tungsten carbide seal ring. The position of both mechanical seals shall depend on the shaft. Mounting of the lower mechanical seal on the impeller hub will not be acceptable.

6.13. PUMP BEARINGS

6.13.1. The pump shaft shall rotate on two bearings. The upper bearing shall be a single roller bearing. The lower bearing shall be a two row angular contact bearing to compensate for axial thrust and radial forces. Single row lower bearings are not acceptable. Motor bearings shall be permanently grease lubricated.

6.14. PUMP SHAFT

6.14.1. The pump and motor shaft shall be the same unit. The pump shaft shall be an extension of the motor shaft. Couplings shall not be acceptable.

6.14.2. For pumps twenty five (25) HP and larger, the shaft shall be Carbon Steel AISI C1035 and shall be completely isolated from the pumped liquid. For pumps under twenty five (25) HP, the shaft shall be Stainless Steel AISI Type 420.

6.15. IMPELLER

6.15.1. The impeller shall be of Gray Cast Iron, ASTM A48 Class 35B, dynamically balanced, double shrouded, non-clogging design having a long throughlet without acute turns. Whenever possible, a full vaned, non-vortex, impeller shall be used for maximum hydraulic efficiency. The pump manufacturer, upon request, shall provide mass moment of inertia calculations. All impellers shall be coated with an acrylic dispersion zinc phosphate primer.

6.15.2. Impellers shall be retained with an Allen head bolt and shall be capable of passing a minimum three-inch (3") diameter solid. The impeller shall be capable of handling solids, fibrous materials, heavy sludge and other matter found in wastewater.

6.16. PUMP WEAR RINGS

6.16.1. A wear ring system shall be used to provide efficient sealing between the volute and suction inlet of the impeller.

6.16.2. Each pump shall be equipped with a brass or Nitrile rubber coated steel ring insert that is drive fitted to the volute inlet. On pumps twenty (20) HP and larger, a stainless steel impeller wear ring heat-shrink fitted onto the suction inlet of the impeller will also be provided.

6.17. RAILS

6.17.1. The guide rail system shall be Stainless Steel Type 316 and shall require two parallel guide rails. Minimum rail size shall be two (2) inches in diameter. Lower guide rail holders shall be integral to the pump discharge connection.

6.18. CABLE HOLDER

6.18.1. A cable holder shall be provided with an adequate number of hooks to secure the liquid level sensors. Pump cable holders shall be supplied at the top position of each pump guide rail and be sized to hold all excess pump cable. The cable holders shall be suitable for wall or access doorframe mounting, and their mounting hardware shall be Stainless Steel Type 316.

6.19. ELECTRIC SERVICE

6.20. GENERAL: Electrical service shall be 480-volt, three phase, 200-amp minimum for stations. Meters shall have a manual bypass lever for removal of the meter. A fused NEMA Type 3R stainless steel disconnect shall be used between the control panel and the meter can. No galvanized piping is allowed within the wet well.Where 480-volt power is not available, Water Resources will request the developer contact FPL to determine what would be required to have 480-volt at the site. The response from FPL will be evaluated as to if 480-volt is feasible or not for the station.

6.21. CONTROL PANEL

6.21.1. The control panel shall be UL listed.

6.21.2. The level control shall respond to liquid level float switches to automatically start and stop the pumps as well as sound an alarm and energize an alarm light upon high wet well levels.

6.21.3. All pump control operations shall be accomplished by a float type, liquid level control system with all control components mounted in one common enclosure. A float type liquid level control system shall continuously monitor wet well liquid level and control operation of the low-level cutoff for the pumps and shall operate off a 24-volt circuit. The wet well levels to be used in operation are as shown on the drawings.

6.21.4. The control panel shall be standard system of the manufacturer as modified for this application. The control panel shall consist of a main circuit breaker, an emergency generator circuit breaker, a motor circuit breaker, a magnetic starter for each pump motor, and 15-ampere, 120-volt circuit breakers as illustrated on the "Typical City Standard Wastewater Pump Station Details". All control panel circuits shall be 120-volt AC.

6.21.5. Control switches shall provide means to operate each pump manually or automatically. When operated in the automatic mode, the control assembly shall provide means to manually select or automatically alternate the position of the "lead" and "lag" pumps after each pumping cycle. High leg should be into "C" phase panel.

6.21.6. The electrical control equipment shall be mounted within a NEMA Type 3R enclosure constructed of not less than 14-gauge Type 304 stainless steel. The enclosure shall be equipped with an aluminum dead front door and shall incorporate a removable back panel on which control components shall be mounted. Enclosures shall be equipped with a stainless steel drip lip and three-point latch.

6.21.7. All motor circuit breakers, motor starters and control relays shall be Square D and no other. All motor circuit breakers, motor starters and control relays shall be of highest industrial quality, and securely fastened to the removable back panels with screws and washers. All variable frequency drivers (VFD's) and programmable logic controllers (PLC's) shall be Allen Bradley (latest model) or as approved by the City, and no other.

6.21.8. Back panels shall be secured to enclosure with collar studs. Back panels shall be tapped to accept all mounting screws. Self-tapping screws shall not be used to mount any component.

6.21.9. An open frame, across the line, NEMA rated magnetic motor starter as manufactured by Square D shall be furnished for each pump motor. All motor starters shall be equipped with solid state overload protection on all phases. Motor starter contacts shall be easily replaceable without removing the motor starter from its mounted position.

6.21.10.A duplex 120-volt, 15-amp Ground Fault Circuit Interruption (GFCI) utility receptacle, with associated circuit breaker, shall be provided inside of the enclosure.

6.21.11.All operating controls and instruments shall be securely mounted on the control compartment door. All controls and instruments shall be clearly labeled to indicate function.

6.21.12.Pump mode selector switches shall be Hand-Off-Auto (HOA) types to permit override of automatic level control and the manual actuation or shutdown of either motor. HOA switches shall be as manufactured by Square D, providing three (3) switch positions, each of which shall be clearly labeled according to function. Operation of pumps in manual mode shall bypass all safety shutdowns.

6.21.13.Pump run indicator lights shall be equipped to operate at 120-volt input. Lamps shall be easily replaceable from the front of the control compartment door without removing lamp module from its mounted position and shall incorporate a push to test function. Lead/Lag pump indicator lights shall be equipped to operate at 24-volt input.

6.21.14.The control panel shall include one completely enclosed solid-state electronic module per pump to automatically monitor the motor winding insulation resistance of each pump in a duplex pumping station. The monitoring device shall have two LED pilot lights to indicate power on and low megger reading. Emergency bypass and motor reset functions will be included.

6.21.15.The test voltage applied to the motor winding is to be a minimum of 500 Volts to 600 Volts DC. Devices that use a lower voltage shall not be considered acceptable. The test device is to be the SubMeg® as manufactured by Flygt Water and Wastewater Florida, LLC, Apopka, Florida. The test current is to be limited to less than 0.25 milliamps.

6.21.16.The test device is to measure the winding resistance of the motor prior to the motor operation, after it has been called to run. No monitoring is to occur when both motors are running or idle. If the motor winding leakage resistance falls below one (1) megaohm, an alarm circuit is to be activated.

6.21.17.Control terminal blocks shall be of the screw clamp type, rated 600 volts.

6.21.18.The control panel shall incorporate two (2) phase monitors as shown on the drawings. Four hundred eighty volt (480V), three-phase stations shall be equipped with octal base mount units with two form "C" contacts. Phase monitors shall be manufactured by Diversified Products.

6.21.19.Control wire shall be minimum 14 AWG THHN, UL 1015. All control wire shall be routed through plastic wireway with snap-on covers and be neatly bundled and tie wrapped to form a neat assembly.

6.21.20.Three (3) engraved nameplates, made from black PVC with white letters, shall be supplied on the front door of the control panel. The first label shall be seven (7) inches wide and eight (8) inches tall and will state City of Titusville, L/S #____, name of station, and emergency phone number 321-615-8398. Request LS number from site inspector who will receive an LS number from the Utility Engineering department. The labels shall be attached with a 5 mil thick, 3-M type adhesive. No foam tape will be acceptable. The labels shall be uniform in size with ¾" minimum letter size. The second label shall be one (1) inch by seven (7) inches and will show emergency phone number only. For private lift stations the emergency phone number shall be the contracted maintenance provider of the lift station. The third label shall be one (1) inch by seven (7) inches and will list the site address of the lift station.

6.21.21.Generator receptacle shall be Crouse Hinds #AR2042. The completed control panel shall be UL approved and labeled.

6.21.22.All electrical conduits, raceways, and penetrations shall be in conformance with NFPA 70: National Electric Code, latest edition.

6.22. TELEMETRY UNIT

6.22.1. GENERAL: A one-time fee will be charged to the contractor for the purchase of the telemetry unit. This unit shall be supplied by the City of Titusville. The developer/contractor will be responsible to install the tower base, tower, and conduit per the Water Resources department direction.

6.23. WET WELL REQUIREMENTS

6.23.1. Wet wells shall be constructed of concrete and have a wall thickness of at least eight (8) inches. Steel reinforcement shall be applied according to industry standards. The wet well floor shall have a thickness of at least twelve (12) inches. Wet wet lids shall be at least five (5) inches thick and be sealed to the wet well with ram-neck.

6.23.2. Wet wells shall meet the requirements of ASTM C478, Specification for Precast Reinforced Concrete Manhole Sections. Cement shall meet the requirements of ASTM C150-74, Specification for Portland Cement, Type II. Concrete shall meet the minimum requirement for 4,000 psi concrete. Reinforcement shall be grade 40 unless otherwise specified. The required minimum strength of concrete shall be confirmed by making and testing three standard cylinders at seven days. Rings shall be custom made with openings to meet indicated pipe alignment conditions and invert elevations. Base riser section shall be integrally cast with the base slab. Reinforcement of the base slab shall be welded, or continuous with wall reinforcement conditions and invert elevations. Base riser section shall be integrally cast with the base slab. Reinforcement of the base slab shall be welded, or continuous with wall reinforcement.

6.23.3. All interior services of the wet well shall be coated with one of the following: GSE StudLiner® as manufactured by Gundle/SLT Environmental, Inc., Houston, TX, Agru Sure Grip® Concrete Protective Liner as manufactured by Agru America, Inc., Georgetown, SC, or City approved equal.

6.23.4. Wet wells shall be a minimum of eight (8) feet in diameter and shall have a minimum depth of seven (7) feet below the lowest influent for stations over 10,000 GPD, and a minimum of six (6) feet in diameter and a minimum depth of five (5) feet for single family residential of twenty-five (25) lots or less. Additional depth shall be provided based on station design and cycle time. The wet well shall have only one (1) influent line.

6.23.5. Exteriors of the wet well are to be coated with two coats ConSeal CS-55 as manufactured by Concrete Sealants, Inc., Tipp City, OH, or City approved equal. Each coat shall have a dry film thickness of 3.8 millimeters.

6.23.6. Pumping levels shall be set to provide a minimum cycle time of ten (10) minutes at peak flows.

6.23.7. Pump-off water levels shall provide adequate submergence to preclude pump inlet vortexing, or air binding. Operational maximum water levels shall not exceed the invert elevation of the influent pipe.

6.23.8. The wet well floor shall have a minimum slope of 1:1 to the hopper bottom.

6.23.9. The horizontal area of the hopper bottom shall be no greater than necessary for proper installation and operations of the pumps.

6.23.10.No interior ladders shall be permitted in the wet well.

6.24. HATCH AND SAFETY GRATE

6.24.1. Each pump station shall include an aluminum access hatch in the wet well to allow for installation and removal of the pumps. The access hatch shall be manufactured by Halliday. Hatch shall be the single or double door type based on the size of the pump.

6.24.2.. The hatch is to be constructed of aluminum with a load rating of 300 pounds per square feet.

6.24.3. Access hatches will be sized in accordance with pump manufacturer's recommendations and shall include an automatic hold open arm with red vinyl grip.

6.24.4. Hinges shall be Type 316 stainless steel with tamper proof bolts.

6.24.5. A recessed stable for padlock is required that will house a size four (4) Master padlock.

6.24.6. A ¼" extruded angle section with integral seat and continuous anchor flange will be provided so that the hatch can be cast in the concrete wet well lid.

6.24.7. Each access hatch shall include an aluminum safety grate designed for sewer applications. The grate is to be two-piece and hinged for access to pumps. Access hatch shall open away from above ground piping.

6.25. PIPING

6.25.1. All above ground piping shall be ductile iron with Protecto 401® interior coating as manufactured by Induron Protective Coatings, Birmingham, AL. All above ground fittings shall be flange to flange with Epoxy or Protecto 401® interior coating. All fastening hardware shall be Stainless Steel Type 316. A minimum of four (4) inch diameter pipe is required. Force mains shall be AWWA Standard C900 or AWWA Standard C905 PVC. No PVC may be exposed. All fittings and pipe in the wet well or valving arrangements shall be **flange to flange.**

6.26. VALVES

6.26.1. All valves shall be plug type, DeZURIK or City approved equal. Check valves shall be APCO or City approved equal. DeZURIK/APCO valves must be domestic. All checks shall have a brass or bronze seat and flapper with external lever and spring. Valves shall be installed twenty four (24) inches above ground elevation to the center line. Lift stations are to have an isolation valve installed on the forcemain leaving the station property

6.27. PUMP STATION WATER SYSTEM

6.27.1. All public and private wastewater pump stations shall be provided with a potable water system that will be separated from the potable water supply by means of a reeducated pressure type backflow preventer, per City of Titusville specifications. The backflow preventer will be tested and maintained annually. A hose bib for connection of a garden hose shall be provided and shall be located at least five (5) feet away from the control panel. If the station is public, the water service must be tapped separately from any other water source and include the installation of a City of Titusville water meter that is the same size as the RPZ backflow preventer. The sizing should also follow the City of Titusville water service specifications. If the station is private the water service may be separate from any other water source, thus requiring the meter and backflow device, or it may be connected to the existing source to the site but must contain at least the RPZ backflow preventer.

6.28. SITE SIZING AND EASEMENT REQUIREMENTS

6.28.1. Pump station sites shall be a minimum of thirty (30) feet by thirty (30) feet as shown on City of Titusville detail. The Developer shall dedicate the pump station site by warranty deed to the City. Dedicated easements shall also be required around the site as required to provide proper access. In general, the site for the paved access road shall also be dedicated to the City. An exception to this requirement may be allowed on a case-by-case basis in the form of an ingress/egress easement for the access road supplying ample room for proper cleaning and maintenance of the lift station. This includes access for a vacuum tank truck for wet well cleaning. Must submit a site specific drawing.

6.29. ACCESSIBILITY

6.29.1. The pumping station shall be readily accessible by maintenance vehicles during all weather conditions. The access road to the pumping station shall be paved. The facility shall not be located in road rights-of-way. In a phased development, a stabilized access road may be accepted during the initial phase with paving to be accomplished in the later phase. A performance bond may be required for paving.

6.30. SITE FENCING

All pump station site perimeters shall be fenced. The fence shall be black PVC coated type, six (6) feet tall. One (1) drive through double gate at least twelve (12) feet wide for access to the wet well shall be provided. The inside of the fenced area is to be 3000 PSI 6 inch concrete slab with fiber.

6.31. FLOW METER

6.31.1. Indicating, totalizing and recording flow measurements shall be provided at pumping stations designed to handle peak flows of 1,000 GPM or more, or at a station that is deemed critical or at a remote location. Bypass piping around the meter shall be provided for all stations with flow meters to facilitate meter maintenance.

6.32. ODOR CONTROL

6.32.1. On regional stations or stations that would cause a nuisance odor problem, odor control will be required. This will be addressed on a case-by-case basis at the time of the construction permit request.

6.33. EMERGENCY OPERATIONS

6.33.1. All pump stations shall be provided with emergency power receptacles as specified in the control panel schematics (Crouse Hinds model AR2042). high leg switch from B to C. Stand-by emergency generators shall be provided at all wastewater pumping stations which are at critical points in the sewer system. Stand-by emergency generators shall be provided at all wastewater pumping stations with 20 (hp) or larger or are at a critical point in the sewer system. Such stand-by generator facilities shall be sized on a case by case status. All such generators shall be rated and designed to operate the pump station under design conditions. Fuel tanks must be of sufficient size to operate the station for a minimum of seventy-two (72) hours.

6.33.2. Stand alone pipe with cam lock on the suction line to be provided as per the City detail for City lift stations.

6.34. START-UP

6.34.1. The City will perform a confined space entry inspection of the wet well and all equipment prior to any liquid being introduced to the wet well.

6.34.2. A competent factory trained representative shall perform the initial start-up and shall be available for not less than one (1) day for each station being placed into operation.

6.34.3. In addition to startup representative shall instruct the owner's personnel in the operation, maintenance, and adjustments of the equipment.

6.34.4. A complete set of repair manuals shall be provided, including rebuild specifications, part numbers, and general maintenance procedures at the time the pump test is performed. Provide programmable code (in uploadable electronic form) and documentation of all final settings for all variable frequency drivers (VFD's) and programable logic controllers (PLC's).

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PH: (321) 383-5667 Fax: (321) 383-5653

No.	Revision	Date

LIFT STATION DETAILS AND SPECIFICATIONS

WATER RESOURCES DEPT.	2 of 2
May 2022 DATE	
N.T.S. SCALE	SHEET

7.0. RECLAIM DESIGN, AND CONSTRUCTION STANDARDS

7.1. Public: The City of Titusville shall own and maintain all portions of the reclaimed water system up to and including the individual curb stop, service box and/or meter.

7.2. Rights-of-way: All portions of the City owned reclaimed water mains shall maintain a consistent alignment with respect to the centerline of the road. In residential developments, mains should be installed as illustrated on the City's detail. Exceptions will be made on a case-by-case basis. In all cases, mains shall be installed along one side of the road, with crossings kept to a minimum.

7.3. RECLAIMED WATER SERVICES

7.3.1. All installations shall be installed in accordance with City of Titusville Specification details. All reclaimed water service lines shall be constructed of Pantone Purple 522C polyethylene (PE) pipe conforming to the requirements of AWWA Standard C901, utilizing copper tube sizes (CTS) and compression adapters. All brass parts and materials are to be domestic unless otherwise noted by the Water Resources Department.

7.3.2. Reclaimed water service lines greater than ten (10) feet in length from the corporation stop to the curb stop shall have one (1) strand of a suitable conductive location wire installed with the reclaimed water service. The wire shall be 10 gauge single-conductor copper with purple insulation color. *Only purple color is acceptable*. The wire shall be continuous between fittings.

7.3.3. Location: All service lines will be located in the right-of-way. Service lines shall not be terminated in the sidewalk or within two (2) feet adjacent to driveways. Location of service lines in single family and townhouse developments shall be at alternating lot lines. Multiple service line installations shall be located in common areas, and curb stops spaced no more than 18-20 inches apart in single file. Curb stops shall be mounted in a horizontal position at a depth of no greater than ten (10) inches from finished grade.

7.3.4. Meter boxes must be installed at the time of service line installation, prior to final inspection. Refer to Paragraph 7.4.5. Meter box is to be 12" from the back edge of the sidewalk.

7.3.5. Service saddles: Service saddles shall be used for all connections to PVC pipe. Saddle body for C900 pipe shall be nylon/epoxy coated ductile iron and tapped for AWWA/CC threads. Body and bands must be factory pre-sized for C900 or C905 pipe diameter. Bands shall be stainless steel, minimum two (2) inches wide. Brass saddles are acceptable.

7.3.6. Curbs shall be etched with the letter "X", three (3) inches in height, to designate the location of the reclaimed water service. The etching should be painted pantone purple for reclaim.

7.3.7. Reclaim water service lines crossing paved roadways shall be installed by horizontal directional drilling method. The Contractor shall furnish all material, equipment, transportation, tools and labor, and shall comply with all regulations of the governing authority to install the service lines.

7.3.8. Irrigation pump suction piping is not permitted to be connected to reclaim water mains or service lines. Customer irrigationi systems shall be designed and constructed to receive the reclaimed water based on the City main pressure. Any customer systems that pump reclaimed water shall draw from a reservoir separted with an actual air break between reservoir and the City reclaimed water service pipe. For this applicaiton, customers may not substitute virtual aire breaks such vacuum relief valves.

7.4. TAPPING- RECLAIMED WATER

7.4.1 Service saddle placement on main shall be at least 45 degrees off vertical and not to exceed horizontal positioning. No vertical tapping will be allowed except at temporary jumper connections. A minimum 1 inch service will be required for taps on the reclaim system.

7.4.2. Corporation stops shall be CC thread to CTS. Corporation stops will be used only for one (1) inch taps.

7.4.3. Curb stops shall be CTS to meter swivel nut for one (1) inch. No H pattern or roundway type will be permitted. Curb stops will be used only for one (1) inch service lines.

7.4.4. All service lines greater than one (1) inch in diameter shall meet the requirements of the specifications for one and one half (1-1/2) inch and two (2) inch meters.

7.4.5. Meter protection boxes shall be according to size of service line. Meter boxes are to be provided with a cast iron reader lid with "RECLAIMED WATER" and the words in English and Spanish, "DO NOT DRINK, NO BEBER", together with the international symbol equivalent imprinted on meter box top. When new service lines are installed, meter boxes shall be placed over curb stops with sufficient space for future installation of a reclaimed water meter by the City. The top of the meter box shall be adjusted to grade and shall be in undamaged condition. If it is necessary to locate meter boxes near concrete or paved areas, steel meter box covers with reader lids shall be required.

7.5. RECLAIMED WATER: All pipe and fittings for reclaimed water distribution shall be ductile iron or polyvinyl chloride (PVC) pipe. High Density Polyethylene (HDPE) pipe can be used for directional boring purposes only.

7.6. CROSS CONNECTION CONTROL

7.6.1. GENERAL: Backflow prevention is required in accordance with PL 93-623, the Federal Safe Drinking Water Act, and Florida Administrative Code (FAC) 62-555.360 for the protection of the potable water system. The COT has established a Cross-Connection Control Program to meet the above requirements and to monitor and review the reclaimed water system and additions or extensions thereto.

7.6.2. At all locations where reclaimed water service is provided, the public potable water supply shall be protected by installation of a backflow prevention device as required by the City of Titusville Water Resources Department Cross-Connection Control Program Manual.

7.6.3. No cross connection between the reclaimed water system and the potable water system shall be allowed.

7.6.4. Prior to receiving reclaimed water service, the Contractor shall install a dual check valve (a backflow prevention device) or the backflow prevention device as required by the Cross-Connection Control Program Manual on each residential customer's potable water meter in order to protect the potable water system.

7.6.5. Reclaimed services shall be locked off using a HIGHFIELD mfg Mini lock seal assembly until inspection and approval for service by the City Inspector, or designee. Contractor shall supply the locks.

8.6.6. No faucets are allowed on the reclaim system unless an approved quick connect below ground is installed in locked box. See Detail R1 for specifics.

7.7. VALVE LOCATION MARKING: Curbs shall be etched with the letter "V", three (3) inches in height, with the point of the "V" facing the valve, to designate the location of valves. Valving distance shall follow the Water Resources Department Technical Specifications for all appurtenance and fittings unless otherwise approved by the Water Resources Department. The etching should be painted pantone purple for reclaim.

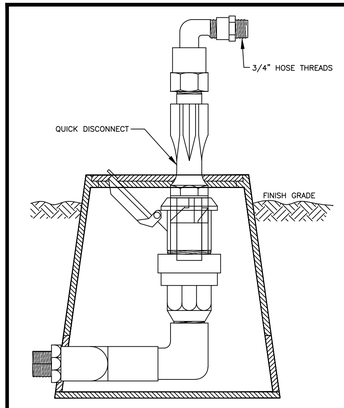
7.8. PUBLIC NOTIFICATION

7.8.1. The public shall be notified of use of reclaimed water by posting advisory signs designating the nature of the reuse project area where reuse is practiced.

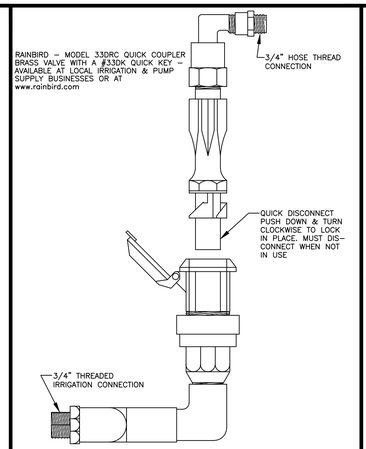
7.8.2. Signage shall be placed, as appropriate, at entrances to residential neighborhoods where reclaimed water is used for landscape irrigation and at prominent locations at all commercial sites, including multi-family developments, office parks, schools, churches, condominiums, residential common areas, recreational developments, and golf courses. A notification method for golf courses, for example, would be to post an advisory sign at the entrance to a golf course and at the first and tenth tees as well as notes on scorecards.

7.8.3. Reclaim Pipe Advisory signs shall be color-coded Pantone Purple 522C and include the following text, "RECLAIMED WATER" and bearing the words in English and Spanish, "DO NOT DRINK, NO BEBER", together with the equivalent standard international symbol.

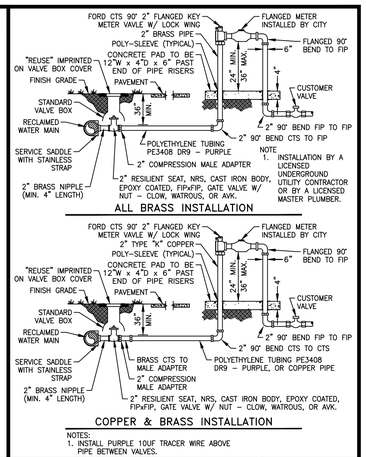
8.8.4. Reclaim Pipe Advisory signs shall be posted adjacent to lakes or ponds used to store reclaimed water and at decorative water features that use reclaimed water. Advisory signs at storage ponds or decorative water features shall include the following text, "RECLAIMED WATER" and bearing the words in English and Spanish, "DO NOT DRINK, NO BEBER" and "DO NOT SWIM, NO NADIR", together with the equivalent international symbols.



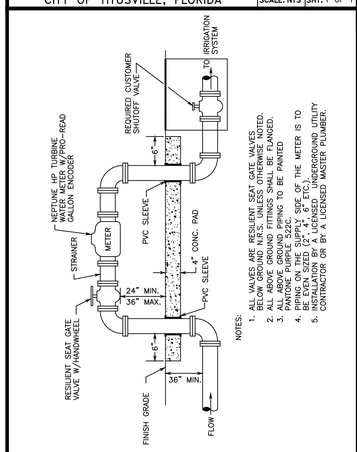
REMOVABLE HOSE BIBB & BOX FOR RECLAIMED WATER SERVICE
CITY OF TITUSVILLE, FLORIDA
DEPARTMENT OF WATER RESOURCES | DATE: 1/19 | EXHIBIT NO. R1 | SCALE: NTS | SHT. 1 OF 1



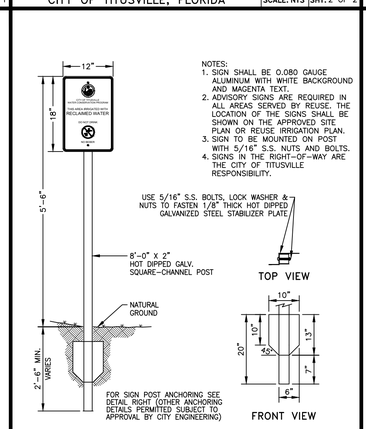
QUICK DISCONNECT HOSE BIBB FOR RECLAIMED WATER SERVICE
CITY OF TITUSVILLE, FLORIDA
DEPARTMENT OF WATER RESOURCES | DATE: 01/19 | EXHIBIT NO. R2 | SCALE: NTS | SHT. 2 OF 2



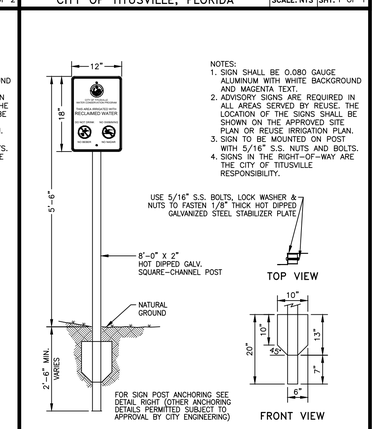
TYPICAL NON-RESIDENTIAL 2" RECLAIMED SERVICE CONNECTION
CITY OF TITUSVILLE, FLORIDA
DEPARTMENT OF WATER RESOURCES | DATE: 01/19 | EXHIBIT NO. R3 | SCALE: NTS | SHT. 1 OF 1



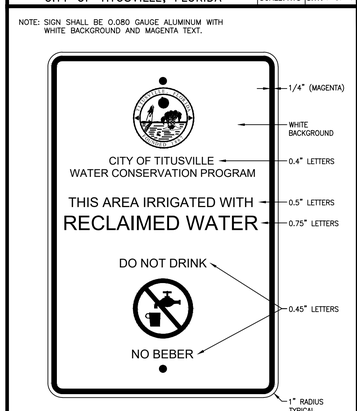
TYPICAL 3" AND LARGER REUSE METER INSTALLATION
CITY OF TITUSVILLE, FLORIDA
DEPARTMENT OF WATER RESOURCES | DATE: 01/19 | EXHIBIT NO. R4 | SCALE: NTS | SHT. 1 OF 1



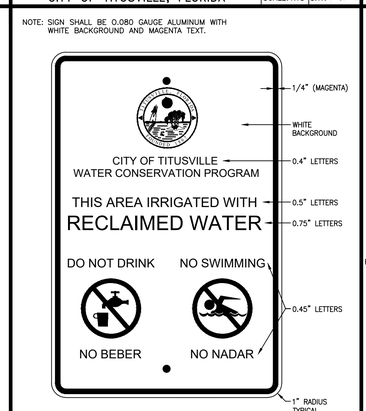
TYPICAL RECLAIMED WATER SIGN DETAIL
CITY OF TITUSVILLE, FLORIDA
DEPARTMENT OF WATER RESOURCES | DATE: 05/22 | EXHIBIT NO. R5 | SCALE: NTS | SHT. 1 OF 4



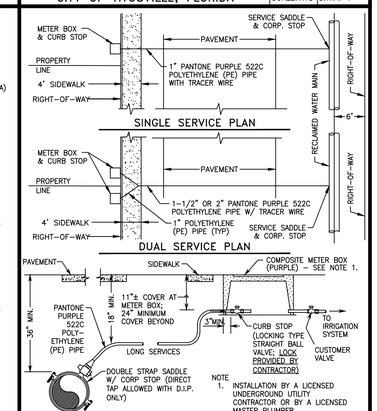
TYPICAL RECLAIMED WATER SIGN DETAIL
CITY OF TITUSVILLE, FLORIDA
DEPARTMENT OF WATER RESOURCES | DATE: 05/22 | EXHIBIT NO. R4 | SCALE: NTS | SHT. 2 OF 4



TYPICAL RECLAIMED WATER SIGN DETAIL
CITY OF TITUSVILLE, FLORIDA
DEPARTMENT OF WATER RESOURCES | DATE: 01/19 | EXHIBIT NO. R7 | SCALE: NTS | SHT. 3 OF 4



TYPICAL RECLAIMED WATER SIGN DETAIL
CITY OF TITUSVILLE, FLORIDA
DEPARTMENT OF WATER RESOURCES | DATE: 01/19 | EXHIBIT NO. R6 | SCALE: NTS | SHT. 4 OF 4



TYPICAL RESIDENTIAL RECLAIMED SERVICE DETAIL
CITY OF TITUSVILLE, FLORIDA
DEPARTMENT OF WATER RESOURCES | DATE: 01/19 | EXHIBIT NO. R9 | SCALE: NTS | SHT. 1 OF 1

City of Titusville
555 South Washington Avenue
Titusville, Florida 32796
PH: (321) 383-5823 Fax: (321) 383-5700

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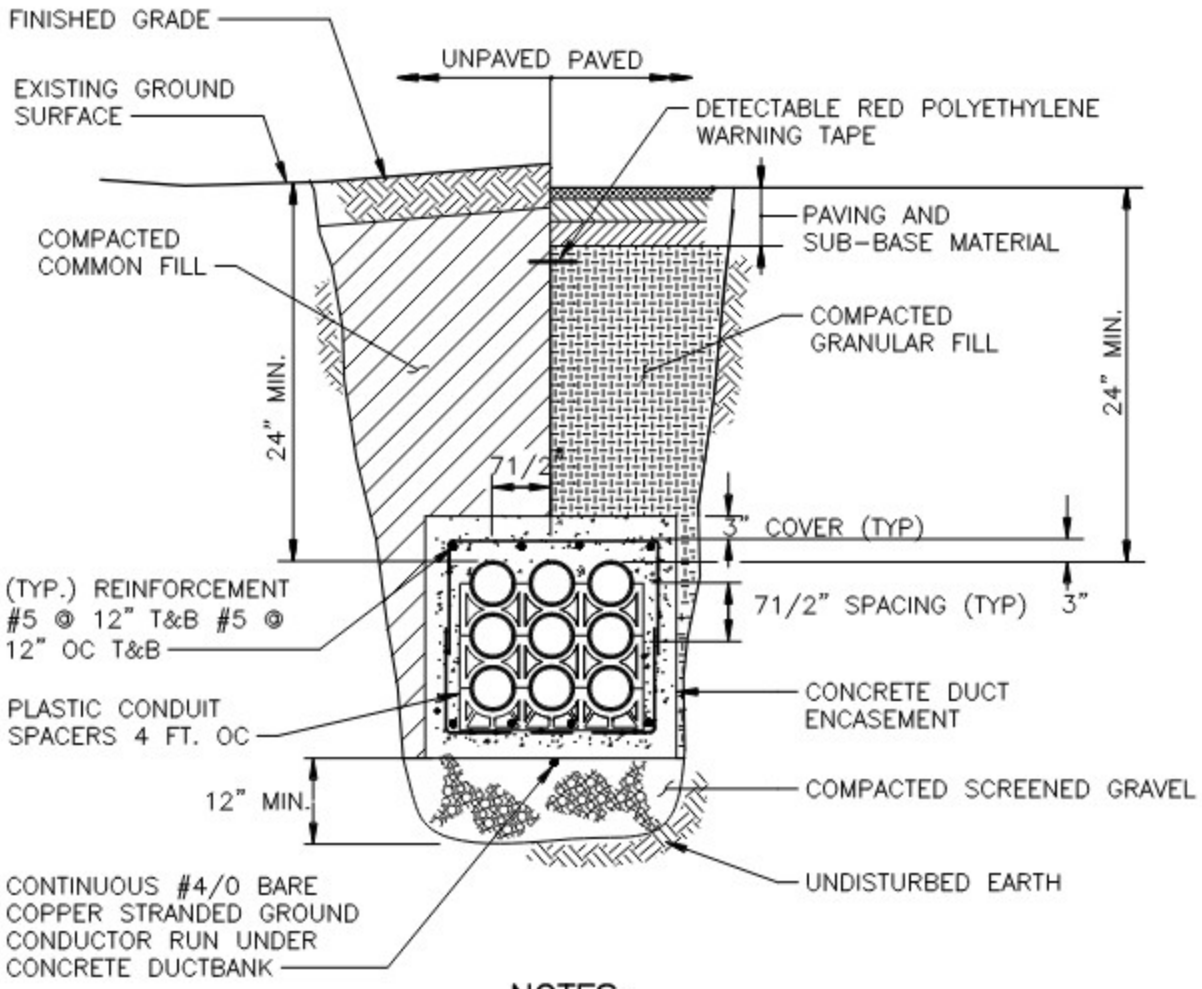
Any detail that is not required for the specific development that these details have been included in the permit set maybe crossed out on this drawing sheet but may not be removed. No additional detail and or specification may be added to this drawing sheet.

No.	Revision	Date
	AS, WILL, KM, TLO,	1-7-19
	paragraph formatting	1-11-19
	AS	5-11-22

RECLAIMED WATER DETAILS AND SPECIFICATIONS

WATER RESOURCES DEPT.	1 of 1
May 2022 DATE	
N.T.S. SCALE	SHEET



NOTES:

1. DUCT BANKS SHALL BE REINFORCED WHEN INSTALLED OVER NEW PIPELINES OR UNDER ROADWAYS, PARKING LOTS OR ANY AREA SUBJECT TO VEHICULAR TRAFFIC. INSTALL REINFORCING BARS AS SHOWN ON THE DRAWINGS, EXTENDING 10-FT. BEYOND AREA NEEDING PROTECTION.
2. REFER TO SPECIFICATIONS FOR EXCAVATION REQUIREMENTS.

UNDERGROUND POWER DUCTBANK

DETAIL H

N.T.S. –

City of Titusville, Florida

Submittal 100%

Replacement of Seminole Lift Station and Demolition of Bayview Lift Station

Technical Specifications

Volume 1 of 1

Prepared for:

City of Titusville

Issue Date:

April 2025

CDM Smith

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SECTION 011000 - SUMMARY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Project information.
2. Work covered by Contract Documents.
3. Contractor’s use of site and premises.
4. Coordination with occupants.
5. Work restrictions.
6. Specification and Drawing conventions.
7. Miscellaneous provisions.

1.3 DEFINITIONS

A. Work Package: A group of specifications, drawings, and schedules prepared by the design team to describe the Project Work for pricing, permitting, and construction.

1.4 PROJECT INFORMATION

A. Project Identification: Replacement of the Seminole Lift Station and Demolition of the Bayview Lift Station .

1. Project Location: Seminole Lift Station, 1300 Riverside Drive and Bayview Lift Station, 1501 Riverside Drive, Titusville, Florida.

B. Owner: City of Titusville.

C. Engineer: CDM Smith Inc., 101 Southhall Lane, Suite 200, Maitland, Florida.

1. Engineer's Representative: Ben Hayner.

1.5 WORK COVERED BY CONTRACT DOCUMENTS

A. The Work of Project is defined by the Contract Documents and includes, but is not limited to, the following:

1. Installation of a new Seminole Lift Station and demolition/abandonment of the existing Seminole Lift Station. Demolition/abandonment of the Bayview Lift Station. Maintaining operations of all systems during construction. Installation of new gravity system from the Seminole Lift Station to the Bayview Lift Station and other Work indicated in the Contract Documents.

B. Type of Contract:

1. Project will be constructed under a single prime contract.

1.6 WORK PERFORMED BY OWNER

A. Cooperate fully with Owner, so work may be carried out smoothly, without interfering with or delaying Work under this Contract or work by Owner. Coordinate the Work of this Contract with other work that may also be in progress at this same location.

1.7 CONTRACTOR'S USE OF SITE AND PREMISES

A. Limits on Use of Site: Limit use of Project site to Work in areas indicated. Do not disturb portions of Project site beyond areas in which the Work is indicated.

1. Driveways, Walkways and Entrances: Keep driveways and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or for storage of materials.

a. Schedule deliveries to minimize use of driveways and entrances by construction operations.
b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.

B. Condition of Existing Buildings: Maintain existing buildings affected by construction operations in a weathertight condition throughout construction prior to demolition. Repair damage caused by construction operations prior to demolition activities and as coordinated with the Owner.

C. Condition of Existing Grounds: Maintain portions of existing grounds affected by construction operations throughout construction period. Repair damage caused by construction operations.

1.8 COORDINATION WITH OCCUPANTS

A. Partial Owner Occupancy: Owner will partially occupy the premises during entire construction period, with the exception of areas under construction. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with Owner's operations. Maintain existing exits unless otherwise indicated.

1. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities. Do not close or obstruct walkways, corridors, or other occupied or used facilities without written permission from Owner and authorities having jurisdiction.

2. Provide not less than **72** hours' notice to Owner of activities that will affect Owner's operations.

1.9 WORK RESTRICTIONS

A. Comply with restrictions on construction operations.

1. Comply with limitations on use of public streets, work on public streets, rights of way, and other requirements of authorities having jurisdiction.

B. On-Site Work Hours: Limit work to between 8:00 a.m. to 3:30 p.m., Monday through Friday, unless otherwise indicated. Work hours may be modified to meet Project requirements if approved by Owner and authorities having jurisdiction.

C. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging for temporary utility services according to requirements indicated:

1. Notify Owner not less than two days in advance of proposed utility interruptions.
2. Obtain Owner's written permission before proceeding with utility interruptions.
3. Project requires sequencing of work to allow for the continued operation of the Seminole and Bayview Lift Stations throughout the Project. Contractor shall coordinate sequence of work with the Engineer and the Owner and receive written authorization from the Owner for planned outages.

D. Noise, Vibration, Dust, and Odors: Coordinate operations that may result in high levels of noise and vibration, dust, odors, or other disruption to Owner occupancy with Owner.

1. Notify Owner not less than two days in advance of proposed disruptive operations.
2. Obtain Owner's written permission before proceeding with disruptive operations.

E. Smoking and Controlled Substance Restrictions: Use of tobacco products, alcoholic beverages, and other controlled substances on the Project site is not permitted.

F. Employee Identification: Provide identification tags for Contractor personnel working on Project site. Require personnel to use identification tags at all times.

1.10 SPECIFICATION AND DRAWING CONVENTIONS

A. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:

1. Imperative mood and streamlined language are generally used in the Specifications. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.
2. Text Color: Text used in the Specifications, including units of measure, manufacturer and product names, and other text may appear in multiple colors or underlined as part of a hyperlink; no emphasis is implied by text with these characteristics.

3. Hypertext: Text used in the Specifications may contain hyperlinks. Hyperlinks may allow for access to linked information that is not residing in the Specifications. Unless otherwise indicated, linked information is not part of the Contract Documents.
4. Specification requirements are to be performed by Contractor unless specifically stated otherwise.

B. Division 00 Contracting Requirements: General provisions of the Contract, including General and Supplementary Conditions, apply to all Sections of the Specifications.

C. Division 01 General Requirements: Requirements of Sections in Division 01 apply to the Work of all Sections in the Specifications.

D. Drawing Coordination: Requirements for materials and products identified on Drawings are described in detail in the Specifications. One or more of the following are used on Drawings to identify materials and products:

1. Terminology: Materials and products are identified by the typical generic terms used in the individual Specifications Sections.
2. Abbreviations: Materials and products are identified by abbreviations scheduled on Drawings.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION 011000

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SECTION 012500 - SUBSTITUTION PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for substitutions.

B. Related Requirements:

1. Section 016000 "Product Requirements" for requirements for submitting comparable product submittals for products by listed manufacturers.

1.3 DEFINITIONS

A. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents.

1. Substitutions for Cause: Changes proposed by Contractor that are required due to changed Project conditions, such as unavailability of product, regulatory changes, or unavailability of required warranty terms.
2. Substitutions for Convenience: Changes proposed by Contractor or Owner that are not required to meet other Project requirements but may offer advantage to Contractor or Owner.

1.4 ACTION SUBMITTALS

A. Substitution Requests: Submit documentation identifying product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.

1. Substitution Request Form: Use form acceptable to Engineer.
2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:

a. Statement indicating why specified product or fabrication, or installation method cannot be provided, if applicable.
b. Coordination of information, including a list of changes or revisions needed to other parts of the Work and to construction performed by Owner and separate contractors that will be necessary to accommodate proposed substitution.

c. Detailed comparison of significant qualities of proposed substitutions with those of the Work specified. Include annotated copy of applicable Specification Section. Significant qualities may include attributes, such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.
d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
e. Samples, where applicable or requested.
f. Certificates and qualification data, where applicable or requested.
g. List of similar installations for completed projects, with project names and addresses as well as names and addresses of Engineers and owners.
h. Material test reports from a qualified testing agency, indicating and interpreting test results for compliance with requirements indicated.
i. Research reports evidencing compliance with building code in effect for Project, from ICC-ES.
j. Detailed comparison of Contractor's construction schedule using proposed substitutions with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating date of receipt of purchase order, lack of availability, or delays in delivery.
k. Cost information, including a proposal of change, if any, in the Contract Sum.
l. Contractor's certification that proposed substitution complies with requirements in the Contract Documents, except as indicated in substitution request, is compatible with related materials and is appropriate for applications indicated.
m. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.

3. Engineer's Action: If necessary, Engineer will request additional information or documentation for evaluation within seven days of receipt of a request for substitution. Engineer will notify Contractor of acceptance or rejection of proposed substitution within 15 days of receipt of request, or seven days of receipt of additional information or documentation, whichever is later.

a. Forms of Acceptance: Change Order, Construction Change Directive, or Engineer's Supplemental Instructions for minor changes in the Work.
b. Use product specified if Engineer does not issue a decision on use of a proposed substitution within time allocated.

1.5 QUALITY ASSURANCE

A. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials. Engage a qualified testing agency to perform compatibility tests recommended by manufacturers.

1.6 PROCEDURES

A. Coordination: Revise or adjust affected work as necessary to integrate work of the approved substitutions.

1.7 SUBSTITUTIONS

A. Substitutions for Cause: Submit requests for substitution immediately on discovery of need for change, but not later than 15 days prior to time required for preparation and review of related submittals.

1. Conditions: Engineer will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Engineer will return requests without action, except to record noncompliance with these requirements:

a. Requested substitution is consistent with the Contract Documents and will produce indicated results.
b. Substitution request is fully documented and properly submitted.
c. Requested substitution will not adversely affect Contractor's construction schedule.
d. Requested substitution has received necessary approvals of authorities having jurisdiction.
e. Requested substitution is compatible with other portions of the Work.
f. Requested substitution has been coordinated with other portions of the Work.
g. Requested substitution provides specified warranty.
h. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

B. Substitutions for Convenience: Engineer will consider requests for substitution if received within 60 days after commencement of the Work. Requests received after that time may be considered or rejected at discretion of Engineer.

1. Conditions: Engineer will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Engineer will return requests without action, except to record noncompliance with these requirements:

a. Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner's additional responsibilities may include compensation to Engineer for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.
b. Requested substitution does not require extensive revisions to the Contract Documents.
c. Requested substitution is consistent with the Contract Documents and will produce indicated results.
d. Substitution request is fully documented and properly submitted.

e. Requested substitution will not adversely affect Contractor's construction schedule.
f. Requested substitution has received necessary approvals of authorities having jurisdiction.
g. Requested substitution is compatible with other portions of the Work.
h. Requested substitution has been coordinated with other portions of the Work.
i. Requested substitution provides specified warranty.
j. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION 012500

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SECTION 012900 - PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements necessary to prepare and process Applications for Payment.

B. All Work under this Contract shall be complete, in-place, fully tested, ready for continuous uninterrupted service and Final Acceptance by the Owner. Required items of Work and incidentals necessary for the satisfactory completion of the Work which are not specifically listed in the Bid Schedule, and which are not specified in this Section to be measured or included in one of the items listed in the Bid Schedule, shall be considered as incidental to the Work.

C. Where quantities are shown they are approximate and are given only as a basis of calculation upon which the award of the Contract is to be made. The Owner or Engineer do not assume any responsibility that the final quantities, nor shall Contractor claim misunderstanding because of such estimate of quantities. Final payment will be made only for the satisfactorily completed quantity of each item.

D. Related Requirements:

1. Section 013200 "Construction Progress Documentation" for administrative requirements governing the preparation and submittal of the Contractor's construction schedule.

1.3 DEFINITIONS

A. Submitted Bid: The Bid submitted by the Contractor specific to this project and accepted by the Owner.

B. Schedule of Values: A statement furnished by Contractor allocating portions of the Contract Sum to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

1.4 SCHEDULE OF VALUES

A. Coordination: Coordinate preparation of the schedule of values with preparation of Contractor's construction schedule.

1. Coordinate line items in the schedule of values with items required to be indicated as separate activities in Contractor's construction schedule and separate line items included in the Submitted Bid.
2. Submit the schedule of values to Engineer at earliest possible date, but no later than ten days before the date scheduled for submittal of initial Applications for Payment.

B. Format and Content: Use Project Manual table of contents and Submitted Bid as a guide to establish line items for the schedule of values. Provide at least one line item for each Specification Section and Submitted Bid line items not included as a Specification Section.

1. Identification: Include the following Project identification on the schedule of values:

    a. Project name and location.
    b. Owner’s name.
    c. Owner’s Project number.
    d. Name of Engineer.
    e. Engineer's Project number.
    f. Contractor's name and address.
    g. Date of submittal.

2. Arrange the schedule of values in tabular form, with separate columns to indicate the following for each item listed:

    a. Related Specification Section or division.
    b. Description of the Work.
    c. Name of subcontractor.
    d. Name of manufacturer or fabricator.
    e. Name of supplier.
    f. Change Orders (numbers) that affect value.
    g. Dollar value of the following, as a percentage of the Contract Sum to nearest one-hundredth percent, adjusted to total 100 percent. Round dollar amounts to whole dollars, with total equal to Contract Sum.

        1) Labor.
        2) Materials.
        3) Equipment.

3. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Provide multiple line items for principal subcontract amounts in excess of five percent of the Contract Sum.
4. Provide a separate line item in the schedule of values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed. Contractor is responsible for obtaining approval from the Owner for any stored materials. Payment for stored materials will be at the discretion of the Owner.
5. Allowances: Provide a separate line item in the schedule of values for each allowance. Show line-item value of unit-cost allowances, as a product of the unit cost, multiplied by measured quantity. Use information indicated in the Contract Documents to determine quantities.

6. Overhead Costs, Proportional Distribution: Include total cost and proportionate share of general overhead and profit for each line item.
7. Temporary Facilities: Show cost of temporary facilities and other major cost items that are not direct cost of actual work-in-place as separate line items.
8. Schedule of Values Revisions: Revise the schedule of values when Change Orders or Construction Change Directives result in a change in the Contract Sum. Include at least one separate line item for each Change Order and Construction Change Directive.

1.5 PAYMENT

A. All costs including all such items as freight, taxes, and overhead and profit, shall be included in the lump sum or unit prices bid for the various Bid Items unless specifically noted otherwise. All Contract prices included within the Bid Schedule will be full compensation for all labor, materials, tools, equipment, overhead and incidentals necessary to complete the Work as shown on the Contract Drawings and/or as specified in the Contract Documents unless specifically noted otherwise.

1.6 COSTS INCLUDED IN PAYMENT ITEMS

A. Payment for all Bid Items listed in the Bid Schedule shall constitute full compensation for all Work shown and/or specified to be performed under each Bid Item and shall include all necessary and incidental Work not specified to be included in any other Bid Item listed in the Bid Schedule.

1.7 PAYMENT ITEMS

A. Bonds and Insurance (BID ITEM 1)

1. Measurement of the lump sum price established in the Submitted Bid will be based on actual invoice amounts to substantiate the actual bond and insurance premiums.
2. Payment of the lump sum price established in the Submitted Bid will be made at the applicable lump sum amount, as above determined, and will represent full compensation for providing the required 100 percent Payment Bond, 100 percent Performance Bond, all insurance and mobilization/ demobilization in accordance with the requirements of the General Conditions.

B. Mobilization and Demobilization (BID ITEM 2)

1. Measurement

a. Measurement of the lump sum price established in the Submitted Bid will be based on the payment schedule in Paragraph 2 for the mobilization, including, but not limited to, those operations necessary for the movement of personnel, equipment, supplies and incidentals to the project site, and for the establishment of temporary offices, building facilities, safety equipment and first aid supplies, sanitary and other facilities, as required by these specifications, and state and local laws and regulations. The lump sum price bid for Mobilization shall not exceed two and one-half percent (2.5%) of the Base Bid.

b. No payments will be made under this lump sum item for the costs of bonds and any required insurance and other preconstruction expense necessary for the start of the work, including the cost of construction materials.
c. No payments will be made under this lump sum item until the base project schedule has been concurred with by the Owner and Engineer.

2. Payment

a. Payment of the lump sum price established in the Submitted Bid will be made in accordance with the following schedule:

Percent of Job Completion	**Percent of Mobilization Payment**
1st Progress Payment with base schedule concurrence	25%
Seminole Lift Station and Gravity Sewer Installed	50%
Seminole Lift Station and Gravity Sewer In-Service and Demolition Under BID ITEMS 4 and 5 Completed.	75%
Final Payment	100%

C. Seminole Lift Station and Gravity Sewer (BID ITEM 3)

1. Measurement of the lump sum price established in the Submitted Bid will be based on the Schedule of Values and percentage complete for all work included in the Contract Documents not listed as a separate line item in the Submitted Bid. This includes all items required to complete the Work including those items not specifically shown but required to complete the Work.
2. No payments will be made under this lump sum item until the base project schedule has been concurred with by the Owner and Engineer.

D. Demolition of Seminole Lift Station (BID ITEM 4)

1. Measurement of the lump sum price established in the Submitted Bid will be based on the Schedule of Values and percentage complete for all work included in the Contract Documents not listed as a separate line item in the Submitted Bid. This includes all items required to complete the Work including those items not specifically shown but required to complete the Work.
2. No payments will be made under this lump sum item until the base project schedule has been concurred with by the Owner and Engineer.

E. Demolition of Bayview Lift Station (BID ITEM 5)

1. Measurement of the lump sum price established in the Submitted Bid will be based on the Schedule of Values and percentage complete for all work included in the Contract Documents not listed as a separate line item in the Submitted Bid. This includes all items

required to complete the Work including those items not specifically shown but required to complete the Work.

2. No payments will be made under this lump sum item until the base project schedule has been concurred with by the Owner and Engineer.

F. Indemnification **(BID ITEM 6)**

1. Payment will be made to the Contractor on a lump sum basis for considerations for indemnification to Owner and Engineer and Subconsultants as specified in the General Conditions.

1.8 APPLICATIONS FOR PAYMENT

A. Each Application for Payment following the initial Application for Payment shall be consistent with previous applications and payments as certified by Engineer and paid for by Owner.

B. Payment Application Times: Submit Application for Payment to Engineer by the 5th of the month. The period covered by each Application for Payment is one month, ending on the last day of the month.

1. Submit draft copy of Application for Payment twenty days prior to due date for review by Engineer.

C. Application for Payment Forms: Use form provided by the Owner or EJCDC Document C-620 if no specific form is provided by the Owner for Applications for Payment.

1. Other Application for Payment forms proposed by the Contractor may be acceptable to Engineer and Owner. Submit forms for approval with initial submittal of schedule of values.

D. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Engineer will return incomplete applications without action.

1. Entries shall match data on the schedule of values and Contractor's construction schedule. Use updated schedules if revisions were made.
2. Include amounts for work completed following previous Application for Payment, whether or not payment has been received. Include only amounts for work completed at time of Application for Payment.
3. Include amounts of Change Orders and Construction Change Directives issued before last day of construction period covered by application.
4. Indicate separate amounts for work being carried out under Owner-requested project acceleration.

E. Stored Materials: Include in Application for Payment amounts applied for materials or equipment purchased or fabricated and stored, but not yet installed.

1. Provide certificate of insurance, evidence of transfer of title to Owner, and consent of surety to payment.

2. Provide supporting documentation that verifies amount requested, such as paid invoices. Match amount requested with amounts indicated on documentation; do not include overhead and profit on stored materials. Materials must be stored close by so quantities can be confirmed by the Owner.
3. Provide summary documentation for stored materials indicating the following:

    a. Value of materials previously stored and remaining stored as of date of previous Applications for Payment.
    b. Value of previously stored materials put in place after date of previous Application for Payment and on or before date of current Application for Payment.
    c. Value of materials stored since date of previous Application for Payment and remaining stored as of date of current Application for Payment.

F. Transmittal: Submit two signed and notarized original copies of each Application for Payment to Engineer by a method ensuring receipt. One copy shall include waivers of lien and similar attachments if required.

1. Transmit each copy with a transmittal form listing attachments and recording appropriate information about application.

G. Waivers of Lien: With each Application for Payment, submit waivers of lien from entities lawfully entitled to file a lien arising out of the Contract and related to the Work covered by the payment subcontractors, sub-subcontractors, and suppliers for construction period covered by the previous application.

1. Submit partial waivers on each item for amount requested in previous application, after deduction for retainage, on each item.
2. When an application shows completion of an item, submit conditional final or full waivers.
3. Owner reserves the right to designate which entities involved in the Work must submit waivers.
4. Submit final Application for Payment with or preceded by conditional final waivers from every entity involved with performance of the Work covered by the application who is lawfully entitled to a lien.
5. Waiver Forms: Submit executed waivers of lien on forms acceptable to Owner.

H. Maintain an updated set of drawings to be used as record drawings in accordance with Section 017839. As a prerequisite for monthly progress payments, exhibit the updated record drawings for review by Owner and Engineer for completeness and accuracy.

I. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:

1. List of subcontractors.
2. Schedule of values.
3. Contractor's construction schedule.
4. Products list (preliminary if not final).
5. Sustainable design action plans, including preliminary project materials cost data.
6. Schedule of unit prices.
7. Submittal schedule.
8. List of Contractor's staff assignments.

9. List of Contractor's principal consultants.
10. Copies of building permits.
11. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
12. Initial progress report.
13. Report of preconstruction conference.

J. Application for Payment at Substantial Completion: After Engineer issues the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.

1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.

    a. Complete administrative actions, submittals, and Work proceeding this application, as described in Section 017700 “Closeout Procedures.”

2. Include initial submittal of closeout record drawings in accordance with Section 017839.
3. This application shall reflect Certificate(s) of Substantial Completion issued previously for Owner occupancy of designated portions of the Work.

K. Final Payment Application: After completing Project closeout requirements, submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:

1. Evidence of completion of Project closeout requirements.
2. Certification of completion of final punch list items.
3. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
4. Final submittal of closeout record drawings in accordance with Section 017839.
5. Updated final statement, accounting for final changes to the Contract Sum.
6. Evidence that claims have been settled.
7. Final meter readings for utilities, a measured record of stored fuel, and similar data as of date of Substantial Completion or when Owner took possession of and assumed responsibility for corresponding elements of the Work.
8. Final liquidated damages settlement statement.
9. Proof that taxes, fees, and similar obligations are paid.
10. Waivers and releases.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION 012900

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SECTION 013100 - PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative provisions for coordinating construction operations on Project, including, but not limited to, the following:

1. General coordination procedures.
2. RFIs.
3. Digital project management procedures.
4. Project meetings.

B. Contractor shall participate in coordination requirements. Certain areas of responsibility are assigned to a specific contractor.

C. Related Requirements:

1. Section 017300 "Execution" for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.
2. Section 017700 "Closeout Procedures" for coordinating closeout of the Contract.

1.3 DEFINITIONS

A. RFI: Request for Information. Request from Owner, Engineer, or Contractor seeking information required by or clarifications of the Contract Documents.

1.4 INFORMATIONAL SUBMITTALS

A. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Include the following information in tabular form:

1. Name, address, telephone number, and email address of entity performing subcontract or supplying products.
2. Number and title of related Specification Section(s) covered by subcontract.
3. Drawing number and detail references, as appropriate, covered by subcontract.

B. Key Personnel Names: Within 15 days of starting construction operations, submit a list of key personnel assignments, including superintendent and other personnel in attendance at Project

site. Identify individuals and their duties and responsibilities; list addresses, cellular telephone numbers, and e-mail addresses. Provide names, addresses, and telephone numbers of individuals assigned as alternates in the absence of individuals assigned to Project.

1. Post copies of list in web-based Project software directory, Keep list current at all times.

1.5 GENERAL COORDINATION PROCEDURES

A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations included in different Sections that depend on each other for proper installation, connection, and operation.

1. Schedule construction operations in sequence required to obtain the best results, where installation of one part of the Work depends on installation of other components, before or after its own installation.
2. Coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair.
3. Make adequate provisions to accommodate items scheduled for later installation.

1.6 REQUEST FOR INFORMATION (RFI)

A. General: Immediately on discovery of the need for additional information, clarification, or interpretation of the Contract Documents, Contractor shall prepare and submit an RFI in the form specified.

1. Engineer will return without response those RFIs submitted to Engineer by other entities controlled by Contractor.
2. Coordinate and submit RFIs in a prompt manner to avoid delays in Contractor's work or work of subcontractors.

B. Content of the RFI: Include a detailed, legible description of item needing information or interpretation and the following:

1. Project name.
2. Owner name.
3. Owner’s Project number.
4. Date.
5. Name of Contractor.
6. RFI number, numbered sequentially.
7. RFI subject.
8. Specification Section number and title and related paragraphs, as appropriate.
9. Drawing number and detail references, as appropriate.
10. Field dimensions and conditions, as appropriate.
11. Contractor's suggested resolution. If Contractor's suggested resolution impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
12. Contractor's signature.

13. Attachments: Include sketches, descriptions, measurements, photos, Product Data, Shop Drawings, coordination drawings, and other information necessary to fully describe items needing interpretation.

    a. Include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies, and attachments on attached sketches.

C. RFI Forms:Software-generated form with substantially the same content as indicated above, acceptable to Engineer

1. Attachments shall be electronic files in PDF format.

D. Engineer's Action: Engineer will review each RFI, determine action required, and respond. Allow **seven** days for Engineer's response for each RFI. RFIs received by Engineer after 1:00 p.m. will be considered as received the following working day.

1. The following Contractor-generated RFIs will be returned without action:

    a. Requests for approval of submittals.
    b. Requests for approval of substitutions.
    c. Requests for approval of Contractor's means and methods.
    d. Requests for coordination information already indicated in the Contract Documents.
    e. Requests for adjustments in the Contract Time or the Contract Sum.
    f. Requests for interpretation of Engineer's actions on submittals.
    g. Incomplete RFIs or inaccurately prepared RFIs.

2. Engineer's action may include a request for additional information, in which case Engineer's time for response will date from time of receipt by Engineer of additional information.
3. Engineer's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Proposal.

    a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Engineer in writing within 5 days of receipt of the RFI response.

E. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Submit log weekly. Include the following

1. Project name.
2. Name and address of Contractor.
3. RFI description.
4. Date the RFI was submitted.
5. Date Engineer's response was received.
6. Identification of related Field Order, Work Change Directive, and Proposal Request, as appropriate.

F. On receipt of Engineer's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify Engineer within **seven** days if Contractor disagrees with response.

1.7 DIGITAL PROJECT MANAGEMENT PROCEDURES

A. Use of Engineer's Digital Data Files: Digital data files of Engineer's CAD drawings will be provided by Engineer for Contractor's use during construction.

1. Digital data files may be used by Contractor in preparing coordination drawings, Shop Drawings, and Project Record Drawings.
2. Engineer makes no representations as to the accuracy or completeness of digital data files as they relate to Contract Drawings.
3. Contractor shall execute a data licensing agreement in the form of Agreement form acceptable to Owner and Engineer.

B. PDF Document Preparation: Where PDFs are required to be submitted to Engineer, prepare as follows:

1. Assemble complete submittal package into a single indexed file incorporating submittal requirements of a single Specification Section and transmittal form with links enabling navigation to each item.
2. Name file with submittal number or other unique identifier, including revision identifier.
3. Certifications: Where digitally submitted certificates and certifications are required, provide a digital signature with digital certificate on where indicated.

1.8 PROJECT MEETINGS

A. General: Schedule and conduct meetings and conferences at Project site unless otherwise indicated.

1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner and Engineer of scheduled meeting dates and times a minimum of 10 working days prior to meeting.
2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.
3. Minutes: Entity responsible for conducting meeting will record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner and Engineer, within three days of the meeting.

B. Preconstruction Conference: The City of Titusville Purchasing Department will schedule and conduct a preconstruction conference before starting construction, at a time convenient to Owner and Engineer, but no later than **15** days after execution of the Agreement.

1. Attendees: Authorized representatives of Owner Engineer, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. Participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
2. Agenda: Discuss items of significance that could affect progress, including the following:

    a. Responsibilities and personnel assignments.
    b. Tentative construction schedule.
    c. Phasing.

d. Critical work sequencing and long lead items.
e. Designation of key personnel and their duties.
f. Lines of communications.
g. Use of web-based Project software.
h. Procedures for processing field decisions and Change Orders.
i. Procedures for RFIs.
j. Procedures for testing and inspecting.
k. Procedures for processing Applications for Payment.
l. Distribution of the Contract Documents.
m. Submittal procedures.
n. Preparation of Record Documents.
o. Use of the premises and existing buildings.
p. Work restrictions.
q. Working hours.
r. Owner's occupancy requirements.
s. Responsibility for temporary facilities and controls.
t. Procedures for moisture and mold control.
u. Procedures for disruptions and shutdowns.
v. Construction waste management and recycling.
w. Parking availability.
x. Office, work, and storage areas.
y. Equipment deliveries and priorities.
z. First aid.
aa. Security.
bb. Progress cleaning.
cc. List of major subcontractors and suppliers.

3. Minutes: The Engineer will record and distribute meeting minutes.

C. Project Closeout Conference: Schedule and conduct a project closeout conference, at a time convenient to Owner and Engineer, but no later than 90 days prior to the scheduled date of Substantial Completion.

1. Conduct the conference to review requirements and responsibilities related to Project closeout.
2. Attendees: Authorized representatives of Owner, Engineer, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the meeting. Participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
3. Agenda: Discuss items of significance that could affect or delay Project closeout, including the following:

a. Preparation of Record Documents.
b. Procedures required prior to inspection for Substantial Completion and for final inspection for acceptance.
c. Procedures for completing and archiving web-based Project software site data files.
d. Submittal of written warranties.
e. Requirements for preparing operations and maintenance data.
f. Requirements for delivery of material samples, attic stock, and spare parts.
g. Requirements for demonstration and training.

h. Preparation of Contractor's punch list.
i. Procedures for processing Applications for Payment at Substantial Completion and for final payment including final change order.
j. Submittal procedures.
k. Coordination of separate contracts.
l. Owner's partial occupancy requirements including certificate of occupancy and closeout of permits.
m. Installation of Owner's furniture, fixtures, and equipment.
n. Responsibility for removing temporary facilities and controls.
o. Final cleaning.

4. Minutes: Entity conducting meeting will record and distribute meeting minutes.

D. Progress Meetings: Conduct progress meetings at monthly intervals.

1. Coordinate dates of meetings with preparation of payment requests.
2. Attendees: In addition to representatives of Owner and Engineer, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
3. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.

a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's construction schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.

1) Review schedule for next period.

b. Review present and future needs of each entity present, including the following:

1) Interface requirements.
2) Sequence of operations.
3) Status of submittals.
4) Deliveries.
5) Off-site fabrication.
6) Access.
7) Site use.
8) Temporary facilities and controls.
9) Progress cleaning.
10) Quality and work standards.
11) Status of correction of deficient items.
12) Field observations.
13) Status of RFIs.
14) Status of Proposal Requests.
15) Pending changes.

16) Status of Change Orders.
17) Pending claims and disputes.
18) Documentation of information for payment requests.

4. Minutes: Entity responsible for conducting the meeting will record and distribute the meeting minutes to each party present and to parties requiring information.

a. Schedule Updating: Revise Contractor's construction schedule after each progress meeting, where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

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SECTION 013200 - CONSTRUCTION PROGRESS DOCUMENTATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following:

1. Contractor's Construction Schedule.
2. Construction schedule updating reports.
3. Daily construction reports.
4. Material location reports.
5. Site condition reports.
6. Unusual event reports.

B. Related Requirements:

1. Section 014000 “Quality Requirements” for schedule of tests and inspections.
2. Section 012900 “Payment Procedures” for schedule of values and requirements for use of cost-loaded schedule for Applications for Payment.

1.3 DEFINITIONS

A. Activity: A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the construction Project. Activities included in a construction schedule consume time and resources.

1. Critical Activity: An activity on the critical path that must start and finish on the planned early start and finish times.
2. Predecessor Activity: An activity that precedes another activity in the network.
3. Successor Activity: An activity that follows another activity in the network.

1.4 INFORMATIONAL SUBMITTALS

A. Format for Submittals: Submit required submittals in the following format:

1. Working electronic copy of schedule file.
2. PDF file.

B. Contractor's Construction Schedule: Initial schedule, of size required to display entire schedule for entire construction period.

1. Submit a working digital copy of schedule, using software indicated, and labeled to comply with requirements for submittals.

C. Construction Schedule Updating Reports: Submit with Applications for Payment.

D. Daily Construction Reports: Submit at weekly intervals.

E. Material Location Reports: Submit at monthly intervals.

F. Site Condition Reports: Submit at time of discovery of differing conditions.

G. Unusual Event Reports: Submit at time of unusual event.

1.5 COORDINATION

A. Coordinate Contractor's Construction Schedule with the schedule of values, submittal schedule, progress reports, payment requests, and other required schedules and reports.

1. Secure time commitments for performing critical elements of the Work from entities involved.
2. Coordinate each construction activity in the network with other activities, and schedule them in proper sequence.

1.6 CONTRACTOR'S CONSTRUCTION SCHEDULE

A. Computer Scheduling Software: Prepare schedules using current version of a program that has been developed specifically to manage construction schedules.

1. Use Microsoft Project for current Windows operating system.

B. Time Frame: Extend schedule from date established for the Notice to Proceed to date of Final Completion.

1. Contract completion date shall not be changed by submission of a schedule that shows an early completion date, unless specifically authorized by Change Order.

C. Activities: Treat each separate area as a separate numbered activity for each main element of the Work. Comply with the following:

1. Activity Duration: Define activities so no activity is longer than 20calendar days, unless specifically allowed by Engineer.
2. Procurement Activities: Include procurement process activities for long lead-time items and major items, requiring a cycle of more than 60 days, as separate activities in schedule. Procurement cycle activities include, but are not limited to, submittals, approvals, purchasing, fabrication, and delivery.

3. Submittal Review Time: Include review and resubmittal times indicated in Section 013300 "Submittal Procedures" in schedule. Coordinate submittal review times in Contractor's Construction Schedule with submittal schedule.
4. Startup and Testing Time: Include no fewer than 15 days for startup and testing.
5. Commissioning Time: Include no fewer than 15 days for commissioning.
6. Substantial Completion: Indicate completion in advance of date established for Substantial Completion and allow time for Engineer's administrative procedures necessary for certification of Substantial Completion.
7. Punch List and Final Completion: Include not more than 30 days for completion of punch list items and Final Completion.

D. Constraints: Include constraints and work restrictions indicated in the Contract Documents and as follows in the schedule and show how the sequence of the Work is affected.

1. Phasing: Arrange list of activities on schedule by phase.
2. Products Ordered in Advance: Include a separate activity for each product. Include delivery date indicated in Section 011000 "Summary." Delivery dates indicated stipulate the earliest possible delivery date.
3. Work Restrictions: Show the effect of the following items on the schedule:

    a. Coordination with existing construction.
    b. Limitations of continued occupancies.
    c. Uninterruptible services.
    d. Partial occupancy before Substantial Completion.
    e. Use-of-premises restrictions.
    f. Provisions for future construction.
    g. Seasonal variations.
    h. Environmental control.

E. Milestones: Include milestones indicated in the Contract Documents in schedule, including, but not limited to, the Notice to Proceed, Substantial Completion, and Final Completion.

F. Upcoming Work Summary: Prepare summary report indicating activities scheduled to occur or commence prior to submittal of next schedule update. Summarize the following issues:

1. Unresolved issues.
2. Unanswered Requests for Information.
3. Rejected or unreturned submittals.
4. Notations on returned submittals.
5. Pending modifications affecting the Work and the Contract Time.

G. Acceptability

1. The Engineer's review of the Contractor's construction schedule submittals will only be for conformance with the Contract requirements – including but not limited to contract time and work sequences specified in the contract documents. The Engineer's review of the schedule shall not include the Contractor's means and methods of construction or safety. The Engineer's concurrence, acceptance, or approval of the Contractor's schedule submittals will not relieve the Contractor from responsibility for complying with the Contract Scope, Contract Time or any other contract requirement. Any indication of

concurrence, acceptance, or approval of the Contractor's schedule will only indicate a general conformance with the Contract Requirements.

2. Failure to include any element of work required for the performance of this Contract will not excuse the Contractor from completing all Work required within the Contract completion date(s), notwithstanding the review of the network by the Engineer.

H. Contractor's Construction Schedule Updating: At monthly intervals, update schedule to reflect actual construction progress and activities. Issue schedule one week before each regularly scheduled progress meeting.

1. Revise schedule immediately after each meeting or other activity where revisions have been recognized or made. Issue updated schedule concurrently with the report of each such meeting.
2. Include a report with updated schedule that indicates every change, including, but not limited to, changes in logic, durations, actual starts and finishes, and activity durations.
3. As the Work progresses, indicate Final Completion percentage for each activity. Activities shall not be considered to be complete until they are in fact 100 percent complete.

I. Recovery Schedule: When periodic update indicates the Work is 14 or more calendar days behind the current approved schedule, submit a separate recovery schedule indicating means by which Contractor intends to regain compliance with the schedule. Indicate changes to working hours, working days, crew sizes, equipment required to achieve compliance, and date by which recovery will be accomplished.

J. Distribution: Distribute copies of approved schedule to Engineer Owner, separate contractors, testing and inspecting agencies, and other parties identified by Contractor with a need-to-know schedule responsibility.

1. Post copies in temporary field offices.
2. When revisions are made, distribute updated schedules to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in performance of construction activities.

1.7 GANTT-CHART SCHEDULE REQUIREMENTS

A. Gantt-Chart Schedule: Submit a comprehensive, fully developed, horizontal, Gantt-chart-type, Contractor's Construction Schedule within 30 days of date established for the Notice to Proceed.

1. Base schedule on the startup construction schedule and additional information received since the start of Project.

B. Preparation: Indicate each significant construction activity separately. Identify first workday of each week with a continuous vertical line.

1. For construction activities that require three months or longer to complete, indicate an estimated completion percentage in 10 percent increments within time bar.

1.8 REPORTS

A. Daily Construction Reports: Prepare a daily construction report recording the following information concerning events at Project site:

1. List of subcontractors at Project site.
2. Approximate count of personnel at Project site.
3. Equipment at Project site.
4. Material deliveries.
5. High and low temperatures and general weather conditions, including presence of rain or snow.
6. Testing and inspection.
7. Accidents.
8. Meetings and significant decisions.
9. Unusual events.
10. Stoppages, delays, shortages, and losses.
11. Meter readings and similar recordings.
12. Emergency procedures.
13. Orders and requests of authorities having jurisdiction.
14. Change Orders received and implemented.
15. Work Change Directives received and implemented.
16. Services connected and disconnected.
17. Equipment or system tests and startups.
18. Partial completions and occupancies.
19. Substantial Completions authorized.

B. Material Location Reports: At monthly intervals, prepare and submit a comprehensive list of materials delivered to and stored at Project site. List shall be cumulative, showing materials previously reported plus items recently delivered. Include with list a statement of progress on and delivery dates for materials or items of equipment fabricated or stored away from Project site. Indicate the following categories for stored materials:

1. Material stored prior to previous report and remaining in storage.
2. Material stored prior to previous report and since removed from storage and installed.
3. Material stored following previous report and remaining in storage.

C. Site Condition Reports: Immediately on discovery of a difference between site conditions and the Contract Documents, prepare and submit a detailed report. Submit with a Request for Information. Include a detailed description of the differing conditions, together with recommendations for changing the Contract Documents.

D. Unusual Event Reports: When an event of an unusual and significant nature occurs at Project site, whether or not related directly to the Work, prepare and submit a special report. List chain of events, persons participating, responses by Contractor's personnel, evaluation of results or effects, and similar pertinent information. Advise Owner in advance when these events are known or predictable.

1. Submit unusual event reports directly to Owner within one day of an occurrence. Distribute copies of report to parties affected by the occurrence.

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PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION 013200

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SECTION 013233 - PHOTOGRAPHIC DOCUMENTATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for the following:

1. Preconstruction photographs.
2. Concealed Work photographs.
3. Periodic construction photographs.
4. Final Completion construction photographs.
5. Preconstruction video recordings.

B. Related Requirements:

1. Section 017700 "Closeout Procedures" for submitting photographic documentation as Project Record Documents at Project closeout.
2. Section 017900 "Demonstration and Training" for submitting video recordings of demonstration of equipment and training of Owner's personnel.
3. Section 024116 "Structure Demolition" for photographic documentation before building demolition operations commence.
4. Section 311000 "Site Clearing" for photographic documentation before site clearing operations commence.

1.3 INFORMATIONAL SUBMITTALS

A. Key Plan: Submit key plan of Project site and buildings with notation of vantage points marked for location and direction of each photograph and video recording. Indicate elevation or story of construction. Include same information as corresponding photographic documentation.

B. Digital Photographs: Submit image files within three days of taking photographs.

1. Submit photos on thumb-drive. Include copy of key plan indicating each photograph's location and direction.
2. Identification: Provide the following information with each image description in file metadata tag:

a. Name of Project.
b. Name of Contractor.
c. Date photograph was taken.

d. Description of location, vantage point, and direction.
e. Unique sequential identifier keyed to accompanying key plan.

C. Video Recordings: Submit video recordings within seven days of recording.

1. Submit video recordings on thumb drive. Include copy of key plan indicating each video's location and direction.
2. Identification: With each submittal, provide the following information in file metadata tag:

a. Name of Project.
b. Name of Contractor.
c. Date video recording was recorded.
d. Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.

1.4 FORMATS AND MEDIA

A. Digital Photographs: Provide color images in JPG format, produced by a digital camera with minimum sensor size of 12 megapixels, and at an image resolution of not less than 3200 by 2400 pixels. Use flash in low light levels or backlit conditions.

B. Digital Video Recordings: Provide high-resolution, digital video in MPEG format, produced by a digital camera with minimum sensor resolution of 12 megapixels and capable of recording in full high-definition mode. Provide supplemental lighting in low light levels or backlit conditions.

C. Digital Images: Submit digital media as originally recorded in the digital camera, without alteration, manipulation, editing, or modifications using image-editing software.

D. Metadata: Record accurate date and time and GPS location data from camera.

E. File Names: Name media files with the date, Project area being depicted and sequential numbering suffix.

F. Usage Rights
Obtain and transfer copyright usage rights from photographer and videographer to Owner for unlimited reproduction of photographic and videographic documentation.

1.5 CONSTRUCTION PHOTOGRAPHS

A. Photographer: Engage a qualified photographer to take construction photographs.

B. General: Take photographs with maximum depth of field and in focus.

1. Maintain key plan with each set of construction photographs that identifies each photographic location.

C. Preconstruction Photographs: Before commencement of the Work take photographs of Project site and surrounding properties, including existing items to remain during construction, from different vantage points, as directed by Engineer.

1. Flag excavation areas andconstruction limits] before taking construction photographs.

2. Take 10 photographs to show existing conditions adjacent to property before starting the Work.
3. Take 10 photographs of existing buildings either on or adjoining property to accurately record physical conditions at start of construction.
4. Take additional photographs as required to record settlement or cracking of adjacent structures, pavements, and improvements.

D. Concealed Work Photographs: Before proceeding with installing work that will conceal other work, take photographs sufficient in number, with annotated descriptions, to record nature and location of concealed Work, including, but not limited to, the following:

1. Underground utilities.
2. Underslab services.
3. Piping.
4. Electrical conduit.
5. Waterproofing and weather-resistant barriers.

E. Periodic Construction Photographs: Take 15 photographs monthly . Select vantage points to show status of construction and progress since last photographs were taken.

F. Final Completion Construction Photographs: Take at least 30 photographs after date of Substantial Completion for submission as Project Record Documents. Additional Photographs: Engineer may request photographs in addition to periodic photographs specified.

1. Three days' notice will be given, where feasible.
2. In emergency situations, take additional photographs within 24 hours of request.
3. Circumstances that could require additional photographs include, but are not limited to, the following:

a. Special events planned at Project site.
b. Immediate follow-up when on-site events result in construction damage or losses.
c. Substantial Completion of a major phase or component of the Work.
d. Extra record photographs at time of final acceptance.
e. Owner's request for special publicity photographs.

1.6 CONSTRUCTION VIDEO RECORDINGS

A. Video Recording Photographer: Engage a qualified videographer with not less than three years' experience to record construction video recordings.

B. Preconstruction Video Recording: Before starting construction, record video recording of Project site and surrounding properties from different vantage points, as directed by Engineer.

1. Flag excavation areas andconstruction limits before recording construction video recordings.

2. Show existing conditions adjacent to Project site before starting the Work.
3. Show existing buildings either on or adjoining Project site to accurately record physical conditions at the start of construction.
4. Show protection efforts by Contractor.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION 013233

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SECTION 013300 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Submittal schedule requirements.
2. Administrative and procedural requirements for submittals.

B. Related Requirements:

1. Section 012900 "Payment Procedures" for submitting Applications for Payment and the schedule of values.
2. Section 013100 "Project Management and Coordination" for submitting coordination drawings and subcontract list and for requirements for web-based Project software.
3. Section 013200 "Construction Progress Documentation" for submitting schedules and reports, including Contractor's construction schedule.
4. Section 013233 "Photographic Documentation" for submitting preconstruction photographs, periodic construction photographs, and Final Completion construction photographs.
5. Section 014000 "Quality Requirements" for submitting test and inspection reports, and schedule of tests and inspections.
6. Section 017700 "Closeout Procedures" for submitting closeout submittals and maintenance material submittals.
7. Section 017823 "Operation and Maintenance Data" for submitting operation and maintenance manuals.
8. Section 017839 "Project Record Documents" for submitting record Drawings, record Specifications, and record Product Data.
9. Section 017900 "Demonstration and Training" for submitting video recordings of demonstration of equipment and training of Owner's personnel.

1.3 `DEFINITIONS

A. Action Submittals: Written and graphic information and physical samples that require Engineer's responsive action. Action submittals are those submittals indicated in individual Specification Sections as "action submittals."

B. Informational Submittals: Written and graphic information and physical samples that do not require Engineer's responsive action. Submittals may be rejected for not complying with

requirements. Informational submittals are those submittals indicated in individual Specification Sections as "informational submittals."

1.4 SUBMITTAL SCHEDULE

A. Submittal Schedule: Submit, as an action submittal, a list of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, ordering, manufacturing, fabrication, and delivery when establishing dates. Include additional time required for making corrections or revisions to submittals noted by Engineer and additional time for handling and reviewing submittals required by those corrections.

1. Coordinate submittal schedule with list of subcontracts, the schedule of values, and Contractor's construction schedule.
2. Format: Arrange the following information in a tabular format:

    a. Scheduled date for first submittal.
    b. Specification Section number and title.
    c. Submittal Category: Action; informational.
    d. Name of subcontractor.
    e. Description of the Work covered.
    f. Scheduled dates for purchasing.
    g. Scheduled date of fabrication.
    h. Scheduled dates for installation.

1.5 SUBMITTAL FORMATS

A. Numbering System: Utilize the following example submittal identification numbering system to identify submittals and as file names for PDF submissions:

1. First Identifier - Alphabet Character: D, S, M or I which represents Shop Drawing (including working drawings and product data), Sample, Manual (Operating & Maintenance) or Informational, respectively.
2. Second Identifier - Next 6 or 8 Digits: Applicable Specification Section Number. Do not mix submittals from different specification sections into a single submittal.
3. Third Identifier - Next Three Digits: Sequential number of each separate item or drawing submitted under each Specification Section, in chronological order submitted, starting at 001.
4. Fourth Identifier - Last Alphabet Character: A to Z, indicating the submission (or resubmission) of the same submittal, i.e., "A" = 1st submission, "B" = 2nd submission, "C" = 3rd submission, etc.
5. EXAMPLE: D-033000.13-008-B.

    a. D = Shop Drawing.
    b. 03 30 00.13 = Section; use only 6 digits for sections that do not include 8 digits.
    c. 008 = the eighth different submittal under this Section.
    d. B = the second submission (first resubmission) of that particular shop drawing.

B. Submittal Information: Include the following information in each submittal:

1. Project name.
2. Date.
3. Name of Engineer.
4. Name of Contractor.
5. Name of firm or entity that prepared submittal.
6. Names of subcontractor, manufacturer, and supplier.
7. Unique submittal number, including revision identifier. Include Specification Section number with sequential alphanumeric identifier and alphanumeric suffix for resubmittals.
8. Category and type of submittal.
9. Submittal purpose and description.
10. Number and title of Specification Section, with paragraph number and generic name for each of multiple items.
11. Drawing number and detail references, as appropriate.
12. Indication of full or partial submittal.
13. Location(s) where product is to be installed, as appropriate.
14. Other necessary identification.
15. Remarks.
16. Signature of transmitter.

C. Options: Identify options requiring selection by Engineer.

D. Deviations and Additional Information: On each submittal, clearly indicate deviations from requirements in the Contract Documents, including minor variations and limitations; include relevant additional information and revisions, other than those requested by Engineer on previous submittals. Indicate by highlighting on each submittal or noting on attached separate sheet.

E. Electronic Submittals: Prepare submittals as PDF package, incorporating complete information into each PDF file. Name PDF file with submittal number.

1.6 SUBMITTAL PROCEDURES

A. Prepare and submit submittals required by individual Specification Sections. Types of submittals are indicated in individual Specification Sections.

1. Email: Prepare submittals as PDF package and transmit to Engineer by sending via email. Include PDF transmittal form. Include information in email subject line as requested by Engineer. Owner is to be copied on submittal transmittals.

    a. Engineer will return annotated file. Annotate and retain one copy of file as a digital Project Record Document file.

B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.

1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
2. Submit all submittal items required for each Specification Section concurrently unless partial submittals for portions of the Work are indicated on approved submittal schedule.

3. Submit action submittals and informational submittals required by the same Specification Section as separate packages under separate transmittals.
4. Coordinate transmittal of submittals for related parts of the Work specified in different Sections, so processing will not be delayed because of need to review submittals concurrently for coordination.

    a. Engineer reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.

C. Processing Time: Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Engineer's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.

1. Initial Review: Allow 30 days for initial review of each submittal (and 45 days for multi-discipline reviews). Allow additional time if coordination with subsequent submittals is required. Engineer will advise Contractor when a submittal being processed must be delayed for coordination.
2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
3. Resubmittal Review: Allow 15 calendar days for review of each resubmittal.

D. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.

1. Note date and content of previous submittal.
2. Note date and content of revision in label or title block and clearly indicate extent of revision.
3. Resubmit submittals until they are marked with approval notation from Engineer's action stamp.
4. Repetitive Reviews: Shop drawings, O&M manuals, and other submittals will be reviewed no more than twice at the Owner's expense. All subsequent reviews will be performed at the Contractor's expense. Reimburse the Owner for all costs invoiced by Engineer for the third and subsequent reviews.

E. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.

F. Use for Construction: Retain complete copies of submittals on Project site. Use only final action submittals that are marked with approval notation from Engineer's action stamp.

1.7 SUBMITTAL REQUIREMENTS

A. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.

1. If information must be specially prepared for submittal because standard published data are unsuitable for use, submit as Shop Drawings, not as Product Data.
2. Mark each copy of each submittal to show which products and options are applicable.
3. Include the following information, as applicable:

a. Manufacturer's catalog cuts.
b. Manufacturer's product specifications.
c. Standard color charts.
d. Statement of compliance with specified referenced standards.
e. Testing by recognized testing agency.
f. Application of testing agency labels and seals.
g. Notation of coordination requirements.
h. Availability and delivery time information.

4. For equipment, include the following in addition to the above, as applicable:

a. Wiring diagrams that show factory-installed wiring.
b. Printed performance curves.
c. Operational range diagrams.
d. Clearances required to other construction, if not indicated on accompanying Shop Drawings.

5. Submit Product Data before Shop Drawings, and before or concurrently with Samples.

B. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data unless submittal based on Engineer's digital data drawing files is otherwise permitted.

1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:

a. Identification of products.
b. Schedules.
c. Compliance with specified standards.
d. Notation of coordination requirements.
e. Notation of dimensions established by field measurement.
f. Relationship and attachment to adjoining construction clearly indicated.
g. Seal and signature of professional engineer if specified.

C. Samples: Submit Samples for review of type, color, pattern, and texture for a check of these characteristics with other materials.

1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
2. Identification: Permanently attach label on unexposed side of Samples that includes the following:

a. Project name and submittal number.
b. Generic description of Sample.
c. Product name and name of manufacturer.
d. Sample source.
e. Number and title of applicable Specification Section.
f. Specification paragraph number and generic name of each item.

3. Email Transmittal: Provide PDF transmittal. Include digital image file illustrating Sample characteristics and identification information for record.
4. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.

    a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
    b. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.

5. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units, showing the full range of colors, textures, and patterns available.

    a. Number of Samples: Submit two full set(s) of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Engineer will return submittal with options selected.

D. Product Schedule: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:

1. Type of product. Include unique identifier for each product indicated in the Contract Documents or assigned by Contractor if none is indicated.
2. Manufacturer and product name, and model number if applicable.
3. Number and name of room or space.
4. Location within room or space.

E. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, contact information of architects and owners, and other information specified.

F. Design Data: Prepare and submit written and graphic information indicating compliance with indicated performance and design criteria in individual Specification Sections. Include list of assumptions and summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Number each page of submittal.

G. Certificates:

1. Certificates and Certifications Submittals: Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity. Provide a notarized signature where indicated.
2. Insert definition of Contractor certificates here if required by individual Specification Sections. See the Evaluations.
3. Contractor’s Certification: Each shop drawing, working drawing, product data, and sample shall have affixed to it the following Certification Statement:

    a. "Certification Statement: by this submittal, I hereby represent that I have determined and verified all field measurements, field construction criteria,

materials, dimensions, catalog numbers and similar data and I have checked and coordinated each item with other applicable approved shop drawings and all Contract requirements. "

4. Installer Certificates: Submit written statements on manufacturer's letterhead, certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.
5. Manufacturer Certificates: Submit written statements on manufacturer's letterhead, certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.
6. Material Certificates: Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.
7. Product Certificates: Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.
8. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of AWS B2.1/B2.1M on AWS forms. Include names of firms and personnel certified.

H. Test and Research Reports:

1. Compatibility Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for substrate preparation and primers required.
2. Field Test Reports: Submit written reports indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.
3. Material Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.
4. Preconstruction Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.
5. Product Test Reports: Submit written reports indicating that current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.
6. Research Reports: Submit written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:

    a. Name of evaluation organization.
    b. Date of evaluation.
    c. Time period when report is in effect.
    d. Product and manufacturers' names.
    e. Description of product.
    f. Test procedures and results.
    g. Limitations of use.

1.8 DELEGATED-DESIGN SERVICES

A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.

1. If criteria indicated are insufficient to perform services or certification required, submit a written request for additional information to Engineer.

B. Delegated-Design Services Certification: In addition to Shop Drawings, Product Data, and other required submittals, submit [**digitally signed PDF file**] [**and**] [**three**] <**Insert number**> paper copies of certificate, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional.

1. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.

C. BIM Incorporation: [**Incorporate**] [**Construction Manager will incorporate**] delegated-design drawing and data files into BIM established for Project.

1. Prepare delegated-design drawings in the following format: [**Same digital data software program, version, and operating system as original Drawings**] <**Insert software name and version**>.

1.9 PROPOSED PRODUCT LIST

A. Within 15 calendar days after date of Notice to Proceed, submit list of major products proposed for use, with name of manufacturer, trade name, and model number of each product.

B. For products specified only by reference standards, indicate manufacturer, trade name, model or catalog designation, and reference standards.

1.10 CONTRACTOR'S REVIEW

A. Action Submittals and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Engineer.

B. Contractor Responsible for:

1. Determination and verification of materials including manufacturer’s catalog numbers.
2. Determination and verification of field measurements and field construction criteria.
3. Checking and coordinating information in submittal with requirements of Work and of Contract Documents.
4. Determination of accuracy and completeness of dimensions and quantities.

5. Confirmation and coordination of dimensions and field conditions at Site.
6. Construction means, techniques, sequences, and procedures.
7. Safety precautions.
8. Coordination and performance of Work of all trades.
9. Other requirements enumerated in Contract Documents.

C. Contractor's Approval: Indicate Contractor's approval for each submittal with a uniform approval stamp. Include name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

1. Engineer will not review submittals received from Contractor that do not have Contractor's review and approval.

1.11 ENGINEER'S REVIEW

A. Do not make mass submittals to Engineer. If mass submittals are received, Engineer's review time stated above will be extended as necessary to perform proper review. Engineer will review mass submittals based on priority determined by Engineer after consultation with Owner and Contractor.

B. Action Submittals: Engineer will review each submittal, indicate corrections or revisions required, and return.

1. PDF Submittals: Engineer will indicate, via markup on each submittal, the appropriate action, as follows:

C. Informational Submittals: Engineer will review each submittal and will not return it, or will return it if it does not comply with requirements. Engineer will forward each submittal to appropriate party.

D. Partial submittals prepared for a portion of the Work will be reviewed when use of partial submittals has received prior approval from Engineer.

E. Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for resubmittal without review.

F. Engineer will return without review submittals received from sources other than Contractor.

G. Submittals not required by the Contract Documents will be returned by Engineer without action.

H. Shop drawings will be returned to the Contractor with one of the following codes.

1. "APPROVED" - This code is assigned when there are no notations or comments on the submittal. When returned under this code the Contractor may release the equipment and/or material for manufacture.
2. "APPROVED AS NOTED" - This code is assigned when a confirmation of the notations and comments IS NOT required by the Contractor. The Contractor may release the equipment or material for manufacture; however, all notations and comments must be incorporated into the final product.

3. “APPROVED AS NOTED/CONFIRM” – This combination of codes is assigned when a confirmation of the notations and comments is required by the Contractor. The Contractor may release the equipment or material for manufacture; however, all notation sand comments must be incorporated into the final product. This confirmation shall specifically address each omission and nonconforming item that was noted. Confirmation is to be received by the Engineer within 15 calendars days of the date of the engineer’s transmittal requiring confirmation.
4. "APPROVED AS NOTED/RESUBMIT" - This combination of codes is assigned when notations and comments are extensive enough to require a resubmittal of the package. The Contractor may release the equipment or material for manufacture; however, all notations and comments must be incorporated into the final product. The resubmittal is to address all comments, omissions and non-conforming items that were noted. An additional box is checked to indicate whether the resubmission is for the complete package, or for parts of the package. If no box is checked, a complete resubmittal shall be provided. Review code may designate if a partial or full submittal is required. If full submittal is required, a complete resubmittal package addressing all comments shall be provided. If a partial submittal is designated, resubmittal shall only include information pertaining to those items noted in review comments requiring clarification and any portions of submittal impacted as a result of the response. Resubmittal is to be received by the Engineer within 30 calendar days of the date of the Engineer's transmittal requiring the resubmittal.
5. "REJECTED" - This code is assigned when the submittal does not meet the intent of the Contract Documents. The Contractor must resubmit the entire package revised to bring the submittal into conformance. It may be necessary to resubmit using a different manufacturer/vendor to meet the requirements of the Contract Documents.
6. "RECEIPT ACKNOWLEDGED (Not subject to Engineer's Approval)" - This code is assigned to acknowledge receipt of a submittal that is not subject to the Engineer's approval. This code is generally used with submittals involving the Contractor’s means and methods of construction work plans, and health and safety plans.

1.12 ELECTRONIC CAD FILES OF PROJECT DRAWINGS

A. Electronic CAD Files of Project Drawings: May only be used to expedite production of Shop Drawings for the Project. Use for other Projects or purposes is not allowed.

B. Electronic CAD Files of Project Drawings: Distributed only under the following conditions:

1. Use of files is solely at receiver's risk. Engineer does not warrant accuracy of files. Receiving files in electronic form does not relieve receiver of responsibilities for measurements, dimensions, and quantities set forth in Contract Documents. In the event of ambiguity, discrepancy, or conflict between information on electronic media and that in Contract Documents, notify Engineer of discrepancy and use information in hard-copy Drawings and Specifications.
2. CAD files do not necessarily represent the latest Contract Documents, existing conditions, and as-built conditions. Receiver is responsible for determining and complying with these conditions and for incorporating addenda and modifications.
3. User is responsible for removing information not normally provided on Shop Drawings and removing references to Contract Documents. Shop Drawings submitted with information associated with other trades or with references to Contract Documents will not be reviewed and will be immediately returned.

4. Receiver shall not hold Engineer responsible for data or file clean-up required to make files usable, nor for error or malfunction in translation, interpretation, or use of this electronic information.
5. Receiver shall understand that even though Engineer has computer virus scanning software to detect presence of computer viruses, there is no guarantee that computer viruses are not present in files or in electronic media.
6. Receiver shall not hold Engineer responsible for such viruses or their consequences, and shall hold Engineer harmless against costs, losses, or damage caused by presence of computer virus in files or media.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION 013300

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SECTION 013513.54 – SPECIAL PROCEDURES FOR MAINTENANCE OF SYSTEM OPERATION AND CONSTRUCTION CONSTRAINTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SITE CONDITIONS

A. Several areas of construction under this contract must be coordinated with the Field Operations Personnel and accomplished in a logical order to maintain the process flow through the lift stations and to allow construction to be completed within the time allowed by Contract Documents. Coordinate the activities to allow orderly and timely completion of all the work.

B. When access through construction areas must be disrupted, provide alternate acceptable access for the Field Operations Personnel.

C. Coordinate the activities in the interface or common areas with the Field Operations Personnel. Submit to the Engineer a description and schedule as to how the common areas will be utilized, recognizing the required coordination with the Field Operations Personnel.

D. Coordinate with the Field Operations Personnel to request any valve closure and provide any corrective measure of temporary facilities necessary to attain the shut off needed to perform the work without interrupting the lift station(s) operation.

E. Provide temporary power equipment, materials, and connections as required at no additional expense to the Owner. Install all temporary wiring in accordance with the NEC. Install any temporary feeders in conduit. Provide temporary power details, methods, materials, etc. to the Engineer prior to making temporary connections.

F. Notify the Engineer and Field Operations Personnel two weeks in advance of tapping, plugging, and bypassing activities.

G. The Contractor is responsible for obtaining a construction meter from the City of Titusville for water used during construction.

H. Contractor shall be responsible for any bypass pumping needed to maintain lift station operations.

I. During Start Up Testing, make available the manpower, equipment and manufacturer's representatives required to make any necessary adjustments and training.

1.3 GENERAL CONSTRUCTION CONSTRAINTS

A. Contractor shall not interfere with the operation of the sanitary sewer collection system or adjacent facilities during construction of the improvements. This section lists constraints under which Contractor shall complete the work and develop the overall plan and scheduling of construction. This list of constraints is not intended to release Contractor from responsibility to coordinate the Work in any manner which will ensure project completion within the time allowed. Contractor shall coordinate all shutdowns and tie-ins with Owner to assist Owner with mandatory operations.

B. The Contractor shall be responsible for coordinating the Work in any manner which will ensure project completion within the Contract Terms, consistent with the constraints described herein, and all other requirements of the Contract Documents.

C. The Owner may require Contractor to perform tapping, plugging and/or bypass shutdown work during non-regular working days and hours at no additional cost to the Owner.

D. The pretreatment temporary influent bypass will be required during demolition, and installation of the new mechanical drum screen. Contractor shall not begin influent bypass, until all materials, equipment and required tools and labor are on site. The temporary influent bypass of the pretreatment structure is limited to no more than 16 weeks.

1.4 EXISTING DRAWINGS

A. The following documents and permits are available for use by the Contractor:

1. Drawings

a. Seminole Lift Station (#29) As-built Survey by Sliger & Assoiciates, Inc. dated 10/1/11.
b. Sewerage Improvements for City of Titusville Florida (Bayview, Seminole St. Pump Stations) by Black and Associates Inc. dated 9/26/58

1.5 CONTRACTOR'S USE OF PREMISES

A. Contractor shall limit the use of the premises for his/her Work and for storage to allow for:

1. Owner (Field Operations Personnel) limited occupancy

B. Coordinate use of premises with Owner.

C. Contractor shall assume full responsibility for security of all his/her and his/her subcontractors' materials and equipment stored on the site.

D. If directed by the Owner or Engineer, move any stored items which interfere with operations of Owner.

E. Obtain and pay for use of additional storage or work areas if needed to perform the Work.

1.6 OWNER OCCUPANCY

A. Owner will partially occupy premises during performance of the work for the conduct of his/her normal operations. Coordinate all construction operations with Owner and Engineer to minimize conflict and to facilitate Owner usage.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

A. The Contractor shall develop a detailed description of the complete sequence of construction. The sequence shall be submitted to the Engineer and Owner for review and approval thirty (30) days following the execution of the Contract Agreement.

RECOMMENDED CONTRACTOR SEQUENCE OF CONSTRUCTION

1. Coordinate with FPL utility to install a 240 VAC conduit and conductor run from the existing 240 VAC transformer bank to the existing FPL utility meter at the existing Seminole Lift Station. FPL to switch the connection from the existing pole connection to this new temporary underground connection and remove the existing on-site utility poles and service drop. FPL will also install a new concrete pole on the west side of Riverside Drive for support and install a new utility pole with transformer bank for the upgraded service to the new Seminole Lift Station.
2. Install the wet tap for the new discharge force main connection to the existing force main and provide temporary bypass piping as necessary to connect the existing Seminole Lift Station to the new connection. Remove the existing discharge force main line.
3. Construct the new Seminole Lift Station wet well and Retaining Wall #1.
4. Install new equipment for the Seminole Lift Station (electrical, process mechanical, etc.), excluding the new generator.
5. Construct the remaining portions of the new discharge force main. Remove the previously installed temporary bypass piping and provide a temporary connection from the existing Seminole Lift Station to the 8” plug valve on the south side of the new discharge header.
6. Install the 12” PVC gravity sanitary sewer main in the Riverside Drive right-of-way. Provide temporary plugs for the new 12” PVC gravity sanitary sewer main pipe connections at MH-(5) and MH-(1). Provide temporary outlet pipe connections in these manholes for the existing VCP gravity sanitary sewer mains in order to ensure that the existing wastewater flows into the existing Seminole and Bayview lift stations are both maintained until the new Seminole Lift Station has been completed and is operable. Utilize temporary bypass pumping as needed to accomplish this work.
7. Connect the new electrical service to the new Seminole Lift Station wet well electrical equipment and ensure that the wet well operates as intended.
8. Remove the temporary plugs at MH-(5) and MH-(1) to divert wastewater flows through the new 12” PVC gravity sanitary sewer main to the new Seminole Lift Station. Provide temporary plugs for the outlet pipe connections to the existing Bayview and Seminole lift station VCP sanitary sewer mains.
9. The new Seminole Lift Station shall run for a minimum of 30 days in order to demonstrate acceptable operation.
10. After receiving written authorization from the City of Titusville to proceed with demolition of the existing lift stations, the Contractor shall permanently seal the

temporary outlet pipe connections to the existing VCP sanitary sewer mains at MH-(5) and MH-(1) and abandon the existing gravity sanitary sewer pipes going in to the wet well vaults.

11. Remove all existing equipment from inside the existing Seminole Lift Station, clean out the wet well, and demolish the existing building. Abandon the existing wet well vault in place.
12. Construct Retaining Wall #2 and the new generator at the Seminole Lift Station. Connect the generator to the new electrical equipment.
13. Remove all existing equipment from inside the existing Bayview Lift Station, clean out the wet well, and demolish the existing building. Abandon the existing wet well vault in place.
14. Ensure that all disturbed areas have been permanently stabilized with a healthy stand of vegetation or a non-erodible surface cover (asphalt, concrete, riprap, etc).

END OF SECTION – 013513.24

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SECTION 014000 - QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for quality assurance and quality control.

B. Testing and inspection services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.

1. Specific quality-assurance and quality-control requirements for individual work results are specified in their respective Specification Sections. Requirements in individual Sections may also cover production of standard products.
2. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and quality-control procedures that facilitate compliance with the Contract Document requirements.
3. Requirements for Contractor to provide quality-assurance and quality-control services required by Engineer, Owner, or authorities having jurisdiction are not limited by provisions of this Section.

1.3 DEFINITIONS

A. Experienced: When used with an entity or individual, "experienced," unless otherwise further described, means having successfully completed a minimum of five previous projects similar in nature, size, and extent to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

B. Field Quality-Control Tests and Inspections: Tests and inspections that are performed on-site for installation of the Work and for completed Work.

C. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, subcontractor, or sub-subcontractor, to perform a particular construction operation, including installation, erection, application, assembly, and similar operations.

1. Use of trade-specific terminology in referring to a Work result does not require that certain construction activities specified apply exclusively to specific trade(s).

A. Preconstruction Testing: Tests and inspections performed specifically for Project before products and materials are incorporated into the Work, to verify performance or compliance

with specified criteria. Unless otherwise indicated, copies of reports of tests or inspections performed for other than the Project do not meet this definition.

B. Product Tests: Tests and inspections that are performed by a nationally recognized testing laboratory (NRTL) according to 29 CFR 1910.7, by a testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program (NVLAP), or by a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with specified requirements.

C. Source Quality-Control Tests and Inspections: Tests and inspections that are performed at the source (e.g., plant, mill, factory, or shop).

D. Testing Agency: An entity engaged to perform specific tests, inspections, or both. The term "testing laboratory" shall have the same meaning as the term "testing agency."

E. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work, to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.

F. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work, to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Contractor's quality-control services do not include contract administration activities performed by Engineer.

1.4 DELEGATED-DESIGN SERVICES

A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.

1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Engineer.

B. Delegated-Design Services Statement: Submit a statement signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional, indicating that the products and systems are in compliance with performance and design criteria indicated. Include list of codes, loads, and other factors used in performing these services.

1.5 CONFLICTING REQUIREMENTS

A. Conflicting Standards and Other Requirements: If compliance with two or more standards or requirements is specified and the standards or requirements establish different or conflicting requirements for minimum quantities or quality levels, inform the Engineer regarding the conflict and obtain clarification prior to proceeding with the Work. Refer conflicting requirements that are different, but apparently equal, to Engineer for clarification before proceeding.

B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Engineer for a decision before proceeding.

1.6 INFORMATIONAL SUBMITTALS

A. Contractor's Quality-Control Plan: For quality-assurance and quality-control activities and responsibilities.

B. Qualification Data: For Contractor's quality-control personnel.

C. Contractor's Statement of Responsibility: When required by authorities having jurisdiction, submit copy of written statement of responsibility submitted to authorities having jurisdiction before starting work on the following systems:

1. Seismic-force-resisting system, designated seismic system, or component listed in the Statement of Special Inspections.
2. Primary wind-force-resisting system or a wind-resisting component listed in the Statement of Special Inspections.

D. Testing Agency Qualifications: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.

E. Schedule of Tests and Inspections: Prepare in tabular form and include the following:

1. Specification Section number and title.
2. Entity responsible for performing tests and inspections.
3. Description of test and inspection.
4. Identification of applicable standards.
5. Identification of test and inspection methods.
6. Number of tests and inspections required.
7. Time schedule or time span for tests and inspections.
8. Requirements for obtaining samples.
9. Unique characteristics of each quality-control service.

F. Reports: Prepare and submit certified written reports and documents as specified.

G. Permits, Licenses, and Certificates: For Owner's record, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents established for compliance with standards and regulations bearing on performance of the Work.

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1.7 CONTRACTOR'S QUALITY-CONTROL PLAN

A. Quality-Control Plan, General: Submit quality-control plan within 10 days of Notice of Award, and not less than five days prior to preconstruction conference. Submit in format acceptable to Engineer. Identify personnel, procedures, controls, instructions, tests, records, and forms to be used to carry out Contractor's quality-assurance and quality-control responsibilities and to coordinate Owner's quality-assurance and quality-control activities. Coordinate with Contractor's Construction Schedule.

B. Quality-Control Personnel Qualifications: Engage qualified personnel trained and experienced in managing and executing quality-assurance and quality-control procedures similar in nature and extent to those required for Project.

1. Project quality-control manager may also serve as Project superintendent.

C. Submittal Procedure: Describe procedures for ensuring compliance with requirements through review and management of submittal process. Indicate qualifications of personnel responsible for submittal review.

D. Testing and Inspection: In quality-control plan, include a comprehensive schedule of Work requiring testing or inspection, including the following:

1. Contractor-performed tests and inspections, including subcontractor-performed tests and inspections. Include required tests and inspections and Contractor-elected tests and inspections. Distinguish source quality-control tests and inspections from field quality-control tests and inspections.
2. Special inspections required by authorities having jurisdiction and indicated on the Statement of Special Inspections.
3. Owner-performed tests and inspections indicated in the Contract Documents.

E. Continuous Inspection of Workmanship: Describe process for continuous inspection during construction to identify and correct deficiencies in workmanship in addition to testing and inspection specified. Indicate types of corrective actions to be required to bring the Work into compliance with standards of workmanship established by Contract requirements.

F. Monitoring and Documentation: Maintain testing and inspection reports including log of approved and rejected results. Include Work Engineer has indicated as nonconforming or defective. Indicate corrective actions taken to bring nonconforming Work into compliance with requirements. Comply with requirements of authorities having jurisdiction.

1.8 REPORTS AND DOCUMENTS

A. Test and Inspection Reports: Prepare and submit certified written reports specified in other Sections. Include the following:

1. Date of issue.
2. Project title and number.
3. Name, address, telephone number, and email address of testing agency.

4. Dates and locations of samples and tests or inspections.
5. Names of individuals making tests and inspections.
6. Description of the Work and test and inspection method.
7. Identification of product and Specification Section.
8. Complete test or inspection data.
9. Test and inspection results and an interpretation of test results.
10. Record of temperature and weather conditions at time of sample-taking and testing and inspection.
11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
12. Name and signature of laboratory inspector.
13. Recommendations on retesting and reinspecting.

B. Manufacturer's Technical Representative's Field Reports: Prepare written information documenting manufacturer's technical representative's tests and inspections specified in other Sections. Include the following:

1. Name, address, telephone number, and email address of technical representative making report.
2. Statement on condition of substrates and their acceptability for installation of product.
3. Statement that products at Project site comply with requirements.
4. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
5. Results of operational and other tests and a statement of whether observed performance complies with requirements.
6. Statement of whether conditions, products, and installation will affect warranty.
7. Other required items indicated in individual Specification Sections.

C. Factory-Authorized Service Representative's Reports: Prepare written information documenting manufacturer's factory-authorized service representative's tests and inspections specified in other Sections. Include the following:

1. Name, address, telephone number, and email address of factory-authorized service representative making report.
2. Statement that equipment complies with requirements.
3. Results of operational and other tests and a statement of whether observed performance complies with requirements.
4. Statement of whether conditions, products, and installation will affect warranty.
5. Other required items indicated in individual Specification Sections.

1.9 QUALITY ASSURANCE

A. Qualifications paragraphs in this article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.

B. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units. As applicable, procure products from manufacturers able to meet qualification requirements, warranty requirements, and technical or factory-authorized service representative requirements.

C. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

D. Installer Qualifications: A firm or individual experienced in installing, erecting, applying, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.

E. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that is similar in material, design, and extent to those indicated for this Project.

F. Specialists: Certain Specification Sections require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged in the activities indicated.

1. Requirements of authorities having jurisdiction shall supersede requirements for specialists.

G. Testing and Inspecting Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspection indicated, as documented in accordance with ASTM E329**,** and with additional qualifications specified in individual Sections; and, where required by authorities having jurisdiction, that is acceptable to authorities.

H. Manufacturer's Technical Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to observe and inspect, demonstrate, repair and perform service on installations of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

I. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

J. Preconstruction Testing: Where testing agency is indicated to perform preconstruction testing for compliance with specified requirements for performance and test methods. Contractor responsibilities include the following:

1. Provide test specimens representative of proposed products and construction.
2. Submit specimens in a timely manner with sufficient time for testing and analyzing results to prevent delaying the Work.
3. Provide sizes and configurations of test assemblies to adequately demonstrate capability of products to comply with performance requirements.
4. Build site-assembled test assemblies using installers who will perform same tasks for Project.
5. When testing is complete, remove test specimens and test assemblies, ; do not reuse products on Project.

6. Testing Agency Responsibilities: Submit a certified written report of each test, inspection, and similar quality-assurance service to Engineer, with copy to Contractor. Interpret tests and inspections and state in each report whether tested and inspected Work complies with or deviates from the Contract Documents.

1.10 QUALITY CONTROL

A. Contractor Responsibilities: Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Perform additional quality-control activities, whether specified or not, to verify and document that the Work complies with requirements.

1. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified or not.

2. Engage a qualified testing agency to perform quality-control services.
3. Notify testing agencies and Engineer at least 24 hours in advance of time when Work that requires testing or inspection will be performed.
4. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
5. Testing and inspection requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
6. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.

B. Retesting/Reinspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents.

C. Testing Agency Responsibilities: Cooperate with Engineer and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.

1. Notify Engineer and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
2. Determine the locations from which test samples will be taken and in which in-situ tests are conducted.
3. Conduct and interpret tests and inspections and state in each report whether tested and inspected Work complies with or deviates from requirements.
4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
6. Do not perform duties of Contractor.

D. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing as specified in Section 013300 "Submittal Procedures."

E. Manufacturer's Technical Services: Where indicated, engage a manufacturer's technical representative to observe and inspect the Work. Manufacturer's technical representative's services include participation in preinstallation conferences, examination of substrates and conditions, verification of materials, observation of Installer activities, inspection of completed portions of the Work, and submittal of written reports.

F. Contractor’s Associated Requirements and Services: Cooperate with agencies and representatives performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:

1. Access to the Work.
2. Incidental labor and facilities necessary to facilitate tests and inspections.
3. Adequate quantities of representative samples of materials that require testing and inspection. Assist agency in obtaining samples.
4. Facilities for storage and field curing of test samples.
5. Delivery of samples to testing agencies.
6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
7. Security and protection for samples and for testing and inspection equipment at Project site.

G. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and quality-control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspection.

1. Schedule times for tests, inspections, obtaining samples, and similar activities.

H. Schedule of Tests and Inspections: Prepare a schedule of tests, inspections, and similar quality-control services required by the Contract Documents as a component of Contractor's quality-control plan. Coordinate and submit concurrently with Contractor's Construction Schedule. Update and submit with each Application for Payments.

1. Schedule Contents: Include tests, inspections, and quality-control services, including Contractor- and Owner-retained services, commissioning activities, and other Project-required services paid for by other entities.
2. Distribution: Distribute schedule to Owner, Engineer, testing agencies, and each party involved in performance of portions of the Work where tests and inspections are required.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 TEST AND INSPECTION LOG

A. Test and Inspection Log: Prepare a record of tests and inspections. Include the following:

1. Date test or inspection was conducted.
2. Description of the Work tested or inspected.
3. Date test or inspection results were transmitted to Engineer.
4. Identification of testing agency or special inspector conducting test or inspection.

B. Maintain log at Project site. Post changes and revisions as they occur. Provide access to test and inspection log for Engineer's reference during normal working hours.

1. Submit log at Project closeout as part of Project Record Documents.

3.2 REPAIR AND PROTECTION

A. General: On completion of testing, inspection, sample taking, and similar services, repair damaged construction and restore substrates and finishes.

1. Provide materials and comply with installation requirements specified in other Specification Sections or matching existing substrates and finishes. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible. Comply with the Contract Document requirements for cutting and patching in Section 017300 "Execution."

B. Protect construction exposed by or for quality-control service activities.

C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION 014000

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SECTION 014200 - REFERENCES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 DEFINITIONS

A. General: Basic Contract definitions are included in the Conditions of the Contract.

B. "Approved": When used to convey Engineer's action on Contractor's submittals, applications, and requests, "approved" is limited to Engineer's duties and responsibilities as stated in the Conditions of the Contract.

C. "Directed": A command or instruction by Engineer. Other terms including "requested," "authorized," "selected," "required," and "permitted" have the same meaning as "directed."

D. "Indicated": Requirements expressed by graphic representations or in written form on Drawings, in Specifications, and in other Contract Documents. Other terms including "shown," "noted," "scheduled," and "specified" have the same meaning as "indicated."

E. "Regulations": Laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, and rules, conventions, and agreements within the construction industry that control performance of the Work.

F. "Furnish": Supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.

G. "Install": Unload, temporarily store, unpack, assemble, erect, place, anchor, apply, work to dimension, finish, cure, protect, clean, and similar operations at Project site.

H. "Provide": Furnish and install, complete and ready for the intended use.

I. "Project Site": Space available for performing construction activities. The extent of Project site is shown on Drawings and may or may not be identical with the description of the land on which Project is to be built.

1.3 INDUSTRY STANDARDS

A. Applicability of Standards: Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.

B. Publication Dates: Comply with standards in effect as of date of the Contract Documents unless otherwise indicated.

C. Copies of Standards: Each entity engaged in construction on Project should be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents.

1. Where copies of standards are needed to perform a required construction activity, obtain copies directly from publication source.

1.4 ABBREVIATIONS AND ACRONYMS

A. Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities indicated in Gale's "Encyclopedia of Associations: National Organizations of the U.S." or in Columbia Books' "National Trade & Professional Associations of the United States."

B. Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. Abbreviations and acronyms not included in this list shall mean the recognized name of the entities indicated in Gale's "Encyclopedia of Associations: National Organizations of the U.S." or in Columbia Books' "National Trade & Professional Associations of the United States." The information in this list is subject to change and is believed to be accurate as of the date of the Contract Documents.

1. AABC - Associated Air Balance Council; www.aabc.com.
2. AAMA - American Architectural Manufacturers Association; www.aamanet.org.
3. AAPFCO - Association of American Plant Food Control Officials; www.aapfco.org.
4. AASHTO - American Association of State Highway and Transportation Officials; www.transportation.org.
5. AATCC - American Association of Textile Chemists and Colorists; www.aatcc.org.
6. ABMA - American Bearing Manufacturers Association; www.americanbearings.org.
7. ABMA - American Boiler Manufacturers Association; www.abma.com.
8. ACI - American Concrete Institute; (Formerly: ACI International); www.concrete.org
9. ACPA - American Concrete Pipe Association; www.concrete-pipe.org.
10. AEIC - Association of Edison Illuminating Companies, Inc. (The); www.aeic.org.
11. AF&PA - American Forest & Paper Association; www.afandpa.org.
12. AGA - American Gas Association; www.aga.org.
13. AHAM - Association of Home Appliance Manufacturers; www.aham.org.
14. AHRI - Air-Conditioning, Heating, and Refrigeration Institute (The); www.ahrinet.org.
15. AI - Asphalt Institute; www.asphaltinstitute.org.
16. AIA - American Institute of Architects (The); www.aia.org.
17. AISC - American Institute of Steel Construction; www.aisc.org.
18. AISI - American Iron and Steel Institute; www.steel.org.
19. AITC - American Institute of Timber Construction; www.aitc-glulam.org.
20. AMCA - Air Movement and Control Association International, Inc.; www.amca.org.
21. ANSI - American National Standards Institute; www.ansi.org.
22. AOSA - Association of Official Seed Analysts, Inc.; www.aosaseed.com.
23. APA - APA - The Engineered Wood Association; www.apawood.org.

24. APA - Architectural Precast Association; www.archprecast.org.
25. API - American Petroleum Institute; www.api.org.
26. ARI - Air-Conditioning & Refrigeration Institute; (See AHRI).
27. ARI - American Refrigeration Institute; (See AHRI).
28. ARMA - Asphalt Roofing Manufacturers Association; www.asphaltroofing.org.
29. ASCE - American Society of Civil Engineers; www.asce.org.
30. ASCE/SEI - American Society of Civil Engineers/Structural Engineering Institute; (See ASCE).
31. ASHRAE - American Society of Heating, Refrigerating and Air-Conditioning Engineers; www.ashrae.org.
32. ASME - ASME International; (American Society of Mechanical Engineers); www.asme.org.
33. ASSE - American Society of Safety Engineers (The); www.asse.org.
34. ASSE - American Society of Sanitary Engineering; www.asse-plumbing.org.
35. ASTM - ASTM International; www.astm.org.
36. ATIS - Alliance for Telecommunications Industry Solutions; www.atis.org.
37. AWEA - American Wind Energy Association; www.awea.org.
38. AWI - Architectural Woodwork Institute; www.awinet.org.
39. AWMAC - Architectural Woodwork Manufacturers Association of Canada; www.awmac.com.
40. AWPA - American Wood Protection Association; www.awpa.com.
41. AWS - American Welding Society; www.aws.org.
42. AWWA - American Water Works Association; www.awwa.org.
43. BHMA - Builders Hardware Manufacturers Association; www.buildershardware.com.
44. BIA - Brick Industry Association (The); www.gobrick.com.
45. BICSI - BICSI, Inc.; www.bicsi.org.
46. BIFMA - BIFMA International; (Business and Institutional Furniture Manufacturer's Association); www.bifma.org.
47. BISSC - Baking Industry Sanitation Standards Committee; www.bissc.org.
48. BWF - Badminton World Federation; (Formerly: International Badminton Federation); www.bissc.org.
49. CDA - Copper Development Association; www.copper.org.
50. CE - Conformite Europeenne; http://ec.europa.eu/growth/single-market/ce-marking/
51. CEA - Canadian Electricity Association; www.electricity.ca.
52. CEA - Consumer Electronics Association; www.ce.org.
53. CFFA - Chemical Fabrics and Film Association, Inc.; www.chemicalfabricsandfilm.com.
54. CFSEI - Cold-Formed Steel Engineers Institute; www.cfsei.org.
55. CGA - Compressed Gas Association; www.cganet.com.
56. CIMA - Cellulose Insulation Manufacturers Association; www.cellulose.org.
57. CISCA - Ceilings & Interior Systems Construction Association; www.cisca.org.
58. CISPI - Cast Iron Soil Pipe Institute; www.cispi.org.
59. CLFMI - Chain Link Fence Manufacturers Institute; www.chainlinkinfo.org.
60. CPA - Composite Panel Association; www.pbmdf.com.
61. CRI - Carpet and Rug Institute (The); www.carpet-rug.org.
62. CRRC - Cool Roof Rating Council; www.coolroofs.org.
63. CRSI - Concrete Reinforcing Steel Institute; www.crsi.org.
64. CSA - CSA Group; www.csagroup.com.
65. CSA - CSA International; www.csa-international.org.
66. CSI - Construction Specifications Institute (The); www.csinet.org.
67. CSSB - Cedar Shake & Shingle Bureau; www.cedarbureau.org.
68. CTI - Cooling Technology Institute; (Formerly: Cooling Tower Institute); www.cti.org.

69. CWC - Composite Wood Council; (See CPA).
70. DASMA - Door and Access Systems Manufacturers Association; www.dasma.com.
71. DHI - Door and Hardware Institute; www.dhi.org.
72. ECA - Electronic Components Association; (See ECIA).
73. ECAMA - Electronic Components Assemblies & Materials Association; (See ECIA).
74. ECIA - Electronic Components Industry Association; www.eciaonline.org.
75. EIA - Electronic Industries Alliance; (See TIA).
76. EIMA - EIFS Industry Members Association; www.eima.com.
77. EJMA - Expansion Joint Manufacturers Association, Inc.; www.ejma.org.
78. ESD - ESD Association; (Electrostatic Discharge Association); www.esda.org .
79. ESTA - Entertainment Services and Technology Association; (See PLASA).
80. ETL - Intertek (See Intertek); www.intertek.com.
81. EVO - Efficiency Valuation Organization; www.evo-world.org.
82. FCI - Fluid Controls Institute; www.fluidcontrolsinstitute.org.
83. FIBA - Federation Internationale de Basketball; (The International Basketball Federation); www.fiba.com.
84. FIVB - Federation Internationale de Volleyball; (The International Volleyball Federation); www.fivb.org.
85. FM Approvals - FM Approvals LLC; www.fmglobal.com.
86. FM Global - FM Global; (Formerly: FMG - FM Global); www.fmglobal.com.
87. FRSA - Florida Roofing, Sheet Metal & Air Conditioning Contractors Association, Inc.; www.floridaroof.com.
88. FSA - Fluid Sealing Association; www.fluidsealing.com.
89. FSC - Forest Stewardship Council U.S.; www.fscus.org.
90. GA - Gypsum Association; www.gypsum.org.
91. GANA - Glass Association of North America; www.glasswebsite.com.
92. GS - Green Seal; www.greenseal.org.
93. HI - Hydraulic Institute; www.pumps.org.
94. HI/GAMA - Hydronics Institute/Gas Appliance Manufacturers Association; (See AHRI).
95. HMMA - Hollow Metal Manufacturers Association; (See NAAMM).
96. HPVA - Hardwood Plywood & Veneer Association; www.hpva.org.
97. HPW - H. P. White Laboratory, Inc.; www.hpwhite.com.
98. IAPSC - International Association of Professional Security Consultants; www.iapsc.org.
99. IAS - International Accreditation Service; www.iasonline.org.
100. ICBO - International Conference of Building Officials; (See ICC).
101. ICC - International Code Council; www.iccsafe.org.
102. ICEA - Insulated Cable Engineers Association, Inc.; www.icea.net.
103. ICPA - International Cast Polymer Alliance; www.icpa-hq.org.
104. ICRI - International Concrete Repair Institute, Inc.; www.icri.org.
105. IEC - International Electrotechnical Commission; www.iec.ch.
106. IEEE - Institute of Electrical and Electronics Engineers, Inc. (The); www.ieee.org.
107. IES - Illuminating Engineering Society; (Formerly: Illuminating Engineering Society of North America); www.ies.org.
108. IESNA - Illuminating Engineering Society of North America; (See IES).
109. IEST - Institute of Environmental Sciences and Technology; www.iest.org.
110. IGMA - Insulating Glass Manufacturers Alliance; www.igmaonline.org.
111. IGSHPA - International Ground Source Heat Pump Association; www.igshpa.okstate.edu.
112. ILI - Indiana Limestone Institute of America, Inc.; www.iliai.com.
113. Intertek - Intertek Group; (Formerly: ETL SEMCO; Intertek Testing Service NA); www.intertek.com.

114. ISA - International Society of Automation (The); (Formerly: Instrumentation, Systems, and Automation Society); www.isa.org.
115. ISAS - Instrumentation, Systems, and Automation Society (The); (See ISA).
116. ISFA - International Surface Fabricators Association; (Formerly: International Solid Surface Fabricators Association); www.isfanow.org.
117. ISO - International Organization for Standardization; www.iso.org.
118. ISSFA - International Solid Surface Fabricators Association; (See ISFA).
119. ITU - International Telecommunication Union; www.itu.int/home.
120. KCMA - Kitchen Cabinet Manufacturers Association; www.kcma.org.
121. LMA - Laminating Materials Association; (See CPA).
122. LPI - Lightning Protection Institute; www.lightning.org.
123. MBMA - Metal Building Manufacturers Association; www.mbma.com.
124. MCA - Metal Construction Association; www.metalconstruction.org.
125. MFMA - Maple Flooring Manufacturers Association, Inc.; www.maplefloor.org.
126. MFMA - Metal Framing Manufacturers Association, Inc.; www.metalframingmfg.org.
127. MHIA - Material Handling Industry of America; www.mhia.org.
128. MIA - Marble Institute of America; www.marble-institute.com.
129. MMPA - Moulding & Millwork Producers Association; www.wmmpa.com.
130. MPI - Master Painters Institute; www.paintinfo.com.
131. MSS - Manufacturers Standardization Society of The Valve and Fittings Industry Inc.; www.mss-hq.org.
132. NAAMM - National Association of Architectural Metal Manufacturers; www.naamm.org.
133. NACE - NACE International; (National Association of Corrosion Engineers International); www.nace.org.
134. NADCA - National Air Duct Cleaners Association; www.nadca.com.
135. NAIMA - North American Insulation Manufacturers Association; www.naima.org.
136. NBGQA - National Building Granite Quarries Association, Inc.; www.nbgqa.com.
137. NBI - New Buildings Institute; www.newbuildings.org.
138. NCAA - National Collegiate Athletic Association (The); www.ncaa.org.
139. NCMA - National Concrete Masonry Association; www.ncma.org.
140. NEBB - National Environmental Balancing Bureau; www.nebb.org.
141. NECA - National Electrical Contractors Association; www.necanet.org.
142. NeLMA - Northeastern Lumber Manufacturers Association; www.nelma.org.
143. NEMA - National Electrical Manufacturers Association; www.nema.org.
144. NETA - InterNational Electrical Testing Association; www.netaworld.org.
145. NFHS - National Federation of State High School Associations; www.nfhs.org.
146. NFPA - National Fire Protection Association; www.nfpa.org.
147. NFPA - NFPA International; (See NFPA).
148. NFRC - National Fenestration Rating Council; www.nfrc.org.
149. NHLA - National Hardwood Lumber Association; www.nhla.com.
150. NLGA - National Lumber Grades Authority; www.nlga.org.
151. NOFMA - National Oak Flooring Manufacturers Association; (See NWFA).
152. NOMMA - National Ornamental & Miscellaneous Metals Association; www.nomma.org.
153. NRCA - National Roofing Contractors Association; www.nrca.net.
154. NRMCA - National Ready Mixed Concrete Association; www.nrmca.org.
155. NSF - NSF International; www.nsf.org.
156. NSPE - National Society of Professional Engineers; www.nspe.org.
157. NSSGA - National Stone, Sand & Gravel Association; www.nssga.org.
158. NTMA - National Terrazzo & Mosaic Association, Inc. (The); www.ntma.com.
159. NWFA - National Wood Flooring Association; www.nwfa.org.

160. PCI - Precast/Prestressed Concrete Institute; www.pci.org.
161. PDI - Plumbing & Drainage Institute; www.pdionline.org.
162. PLASA - PLASA; (Formerly: ESTA - Entertainment Services and Technology Association); www.plasa.org.
163. RCSC - Research Council on Structural Connections; www.boltcouncil.org.
164. RFCI - Resilient Floor Covering Institute; www.rfci.com.
165. RIS - Redwood Inspection Service; www.redwoodinspection.com.
166. SAE - SAE International; www.sae.org.
167. SCTE - Society of Cable Telecommunications Engineers; www.scte.org.
168. SDI - Steel Deck Institute; www.sdi.org.
169. SDI - Steel Door Institute; www.steeldoor.org.
170. SEFA - Scientific Equipment and Furniture Association (The); www.sefalabs.com.
171. SEI/ASCE - Structural Engineering Institute/American Society of Civil Engineers; (See ASCE).
172. SIA - Security Industry Association; www.siaonline.org.
173. SJI - Steel Joist Institute; www.steeljoist.org.
174. SMA - Screen Manufacturers Association; www.smainfo.org.
175. SMACNA - Sheet Metal and Air Conditioning Contractors' National Association; www.smacna.org.
176. SMPTE - Society of Motion Picture and Television Engineers; www.smpte.org.
177. SPFA - Spray Polyurethane Foam Alliance; www.sprayfoam.org.
178. SPIB - Southern Pine Inspection Bureau; www.spib.org.
179. SPRI - Single Ply Roofing Industry; www.spri.org.
180. SRCC - Solar Rating & Certification Corporation; www.solar-rating.org.
181. SSINA - Specialty Steel Industry of North America; www.ssina.com.
182. SSPC - SSPC: The Society for Protective Coatings; www.sspc.org.
183. STI - Steel Tank Institute; www.steeltank.com.
184. SWI - Steel Window Institute; www.steelwindows.com.
185. SWPA - Submersible Wastewater Pump Association; www.swpa.org.
186. TCA - Tilt-Up Concrete Association; www.tilt-up.org.
187. TCNA - Tile Council of North America, Inc.; www.tileusa.com.
188. TEMA - Tubular Exchanger Manufacturers Association, Inc.; www.tema.org.
189. TIA - Telecommunications Industry Association (The); (Formerly: TIA/EIA - Telecommunications Industry Association/Electronic Industries Alliance); www.tiaonline.org.
190. TIA/EIA - Telecommunications Industry Association/Electronic Industries Alliance; (See TIA).
191. TMS - The Masonry Society; www.masonrysociety.org.
192. TPI - Truss Plate Institute; www.tpinst.org.
193. TPI - Turfgrass Producers International; www.turfgrasssod.org.
194. TRI - Tile Roofing Institute; www.tileroofing.org.
195. UL - Underwriters Laboratories Inc.; http://www.ul.com.
196. UNI - Uni-Bell PVC Pipe Association; www.uni-bell.org.
197. USAV - USA Volleyball; www.usavolleyball.org.
198. USGBC - U.S. Green Building Council; www.usgbc.org.
199. USITT - United States Institute for Theatre Technology, Inc.; www.usitt.org.
200. WA - Wallcoverings Association; www.wallcoverings.org
201. WASTEC - Waste Equipment Technology Association; www.wastec.org.
202. WCLIB - West Coast Lumber Inspection Bureau; www.wclib.org.
203. WCMA - Window Covering Manufacturers Association; www.wcmanet.org.
204. WDMA - Window & Door Manufacturers Association; www.wdma.com.

205. WI - Woodwork Institute; www.wicnet.org.
206. WSRCA - Western States Roofing Contractors Association; www.wsrca.com.
207. WWPA - Western Wood Products Association; www.wwpa.org.

C. Code Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. This information is believed to be accurate as of the date of the Contract Documents.

1. DIN - Deutsches Institut fur Normung e.V.; www.din.de.
2. IAPMO - International Association of Plumbing and Mechanical Officials; www.iapmo.org.
3. ICC - International Code Council; www.iccsafe.org.
4. ICC-ES - ICC Evaluation Service, LLC; www.icc-es.org.

D. Federal Government Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. Information is subject to change and is up to date as of the date of the Contract Documents.

1. COE - Army Corps of Engineers; www.usace.army.mil.
2. CPSC - Consumer Product Safety Commission; www.cpsc.gov.
3. DOC - Department of Commerce; National Institute of Standards and Technology; www.nist.gov.
4. DOD - Department of Defense; www.quicksearch.dla.mil.
5. DOE - Department of Energy; www.energy.gov.
6. EPA - Environmental Protection Agency; www.epa.gov.
7. FAA - Federal Aviation Administration; www.faa.gov.
8. FG - Federal Government Publications; www.gpo.gov/fdsys.
9. GSA - General Services Administration; www.gsa.gov.
10. HUD - Department of Housing and Urban Development; www.hud.gov.
11. LBL - Lawrence Berkeley National Laboratory; Environmental Energy Technologies Division; www.eetd.lbl.gov.
12. OSHA - Occupational Safety & Health Administration; www.osha.gov.
13. SD - Department of State; www.state.gov.
14. TRB - Transportation Research Board; National Cooperative Highway Research Program; The National Academies; www.trb.org.
15. USDA - Department of Agriculture; Agriculture Research Service; U.S. Salinity Laboratory; www.ars.usda.gov.
16. USDA - Department of Agriculture; Rural Utilities Service; www.usda.gov.
17. USDOJ - Department of Justice; Office of Justice Programs; National Institute of Justice; www.ojp.usdoj.gov.
18. USP - U.S. Pharmacopeial Convention; www.usp.org.
19. USPS - United States Postal Service; www.usps.com.

E. Standards and Regulations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the standards and regulations in the following list. This information is subject to change and is believed to be accurate as of the date of the Contract Documents.

1. CFR - Code of Federal Regulations; Available from Government Printing Office; www.gpo.gov/fdsys.

2. DOD - Department of Defense; Military Specifications and Standards; Available from DLA Document Services; www.quicksearch.dla.mil.
3. DSCC - Defense Supply Center Columbus; (See FS).
4. FED-STD - Federal Standard; (See FS).
5. FS - Federal Specification; Available from DLA Document Services; www.quicksearch.dla.mil.

    a. Available from Defense Standardization Program; www.dsp.dla.mil.
    b. Available from General Services Administration; www.gsa.gov.
    c. Available from National Institute of Building Sciences/Whole Building Design Guide; www.wbdg.org.

6. MILSPEC - Military Specification and Standards; (See DOD).
7. USAB - United States Access Board; www.access-board.gov.
8. USATBCB - U.S. Architectural & Transportation Barriers Compliance Board; (See USAB).

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION 014200

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SECTION 016000 - PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; and comparable products.

B. Related Requirements:

1. Section 011000 “Summary” for Contractor requirements related to Owner-furnished products.
2. Section 012500 "Substitution Procedures" for requests for substitutions.
3. Section 014200 "References" for applicable industry standards for products specified.
4. Section 017700 “Closeout Procedures” for submitting warranties.

1.3 DEFINITIONS

A. Products: Items obtained for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.

1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature that is current as of date of the Contract Documents.
2. New Products: Items that have not previously been incorporated into another project or facility. Salvaged items or items reused from other projects are not considered new products. Items that are manufactured or fabricated to include recycle contract materials are considered new products, unless indicated otherwise.
3. Comparable Product: Product by named manufacturer that is demonstrated and approved through the comparable product submittal process described in Part 2 “Comparable Products” Article, to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.

B. Subject to Compliance with Requirements: Where the phrase "Subject to compliance with requirements" introduces a product selection procedure in an individual Specification Section, provide products qualified under the specified product procedure. In the event that a named

product or product by a named manufacturer does not meet the other requirements of the specifications, select another named product or product from another named manufacturer that does meet the requirements of the specifications; submit a comparable product request or substitution request, if applicable.

C. Comparable Product Request Submittal: An action submittal requesting consideration of a comparable product, including the following information:

1. Identification of fabrication or installation method to be replaced, including Specification Section number and title and Drawing numbers and titles.
2. Data indicating compliance with the requirements specified in Part 2 "Comparable Products" Article.

D. Substitution: Refer to Section 012500 “Substitution Procedures” for definition and limitations on substitutions.

1.4 QUALITY ASSURANCE

A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, select product compatible with products previously selected, even if previously selected products were also options.

1. Resolution of Compatibility Disputes between Multiple Contractors:

a. Contractors are responsible for providing products and construction methods compatible with products and construction methods of other contractors.
b. If a dispute arises between the multiple contractors over concurrently selectable but incompatible products, Engineer will determine which products shall be used.

B. Identification of Products: Except for required labels and operating data, do not attach or imprint manufacturer or product names or trademarks on exposed surfaces of products or equipment that will be exposed to view in occupied spaces or on the exterior.

1. Labels: Locate required product labels and stamps on a concealed surface, or, where required for observation following installation, on a visually accessible surface that is not conspicuous.
2. Equipment Nameplates: Provide a permanent nameplate on each item of service- or power-operated equipment. Locate on a visually accessible but inconspicuous surface. Include information essential for operation, including the following:

a. Name of product and manufacturer.
b. Model and serial number.
c. Capacity.
d. Speed.
e. Ratings.

1.5 COORDINATION

A. Modify or adjust affected work as necessary to integrate work of approved comparable products and approved substitutions.

1.6 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, and handle products, using means and methods that will prevent damage, deterioration, and loss, including theft and vandalism. Comply with manufacturer's written instructions.

B. Delivery and Handling:

1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
4. Inspect products on delivery to determine compliance with the Contract Documents and that products are undamaged and properly protected.

C. Storage:

1. Provide a secure location and enclosure at Project site for storage of materials and equipment.
2. Store products to allow for inspection and measurement of quantity or counting of units.
3. Store materials in a manner that will not endanger Project structure.
4. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation and with adequate protection for wind.
5. Protect foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
6. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
7. Protect stored products from damage and liquids from freezing.

1.7 PRODUCT WARRANTIES

A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.

1. Manufacturer's Warranty: Written standard warranty form furnished by individual manufacturer for a particular product and issued in the name of the Owner or endorsed by manufacturer to Owner.
2. Special Warranty: Written warranty required by the Contract Documents to provide specific rights for Owner and issued in the name of the Owner or endorsed by manufacturer to Owner.

B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution.

1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
2. Specified Form: When specified forms are included in the Project Manual, prepare a written document, using indicated form properly executed.
3. See other Sections for specific content requirements and particular requirements for submitting special warranties.

C. Submittal Time: Comply with requirements in Section 017700 "Closeout Procedures."

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION PROCEDURES

A. General Product Requirements: Provide products that comply with the Contract Documents, are undamaged and, unless otherwise indicated, are new at time of installation.

1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
3. Owner reserves the right to limit selection to products with warranties meeting requirements of the Contract Documents.
4. Where products are accompanied by the term "as selected," Engineer will make selection.
5. Descriptive, performance, and reference standard requirements in the Specifications establish salient characteristics of products.
6. Or Equal: For products specified by name and accompanied by the term "or equal," "or approved equal," or "or approved," comply with requirements in "Comparable Products" Article to obtain approval for use of an unnamed product.

    a. Submit additional documentation required by Engineer in order to establish equivalency of proposed products. Unless otherwise indicated, evaluation of "or equal" product status is by the Engineer, whose determination is final.

B. Product Selection Procedures:

1. Sole Product: Where Specifications name a single manufacturer and product, provide the named product that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.

    a. Sole product may be indicated by the phrase "Subject to compliance with requirements, provide the following."

2. Sole Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.

    a. Sole manufacturer/source may be indicated by the phrase "Subject to compliance with requirements, provide products by the following."

3. Limited List of Products: Where Specifications include a list of names of both manufacturers and products, provide one of the products listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will be considered unless otherwise indicated.

    a. Limited list of products may be indicated by the phrase "Subject to compliance with requirements, provide one of the following."

2.2 COMPARABLE PRODUCTS

A. Conditions for Consideration of Comparable Products: Engineer will consider Contractor's request for comparable product when the following conditions are satisfied. If the following conditions are not satisfied, Engineer may return requests without action, except to record noncompliance the following requirements:

1. Evidence that proposed product does not require revisions to the Contract Documents, is consistent with the Contract Documents, will produce the indicated results, and is compatible with other portions of the Work.
2. Detailed comparison of significant qualities of proposed product with those of the named basis-of-design product. Significant product qualities include attributes, such as type, function, in-service performance and physical properties, weight, dimension, durability, visual characteristics, and other specific features and requirements.
3. Evidence that proposed product provides specified warranty.
4. List of similar installations for completed projects, with project names and addresses and names and addresses of Engineers and owners, if requested.
5. Samples, if requested.

B. Engineer’s Action on Comparable Products Submittal: If necessary, Engineer will request additional information or documentation for evaluation, as specified in Section 013300 “Submittal Procedures.”

1. Form of Approval of Submittal: As specified in Section 013300 “Submittal Procedures.”
2. Use product specified if Engineer does not issue a decision on use of a comparable product request within time allocated.

C. Submittal Requirements, Two-Step Process: Approval by the Engineer of Contractor's request for use of comparable product is not intended to satisfy other submittal requirements. Comply with specified submittal requirements.

PART 3 - EXECUTION (NOT USED)

END OF SECTION 016000

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SECTION 017300 - EXECUTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes general administrative and procedural requirements governing execution of the Work, including, but not limited to, the following:

1. Construction layout.
2. Field engineering and surveying.
3. Installation of the Work.
4. Cutting and patching.
5. Progress cleaning.
6. Starting and adjusting.
7. Protection of installed construction.

B. Related Requirements:

1. Section 011000 "Summary" for coordination of and limits on use of Project site.
2. Section 013300 "Submittal Procedures" for submitting surveys.
3. Section 017700 "Closeout Procedures" for submitting final property survey with Project Record Documents, recording of Owner-accepted deviations from indicated lines and levels, replacing defective work, and final cleaning.
4. Section 024116 "Stucture Demolition" for demolition and removal.

1.3 DEFINITIONS

A. Cutting: Removal of in-place construction necessary to permit installation or performance of subsequent work.

B. Patching: Fitting and repair work required to restore construction to original conditions after installation of subsequent work.

1.4 INFORMATIONAL SUBMITTALS

A. Certificates: Submit certificate signed by land surveyor, certifying that location and elevation of improvements comply with requirements.

B. Landfill Receipts: Submit copy of receipts issued by a landfill facility, licensed to accept hazardous materials, for hazardous waste disposal.

1.5 QUALITY ASSURANCE

A. Land Surveyor Qualifications: A professional land surveyor who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing land-surveying services of the kind indicated.

B. Cutting and Patching: Comply with requirements for and limitations on cutting and patching of construction elements.

1. Structural Elements: When cutting and patching structural elements, or when encountering the need for cutting and patching of elements, whose structural function is not known, notify Engineer of locations and details of cutting and await directions from Engineer before proceeding. Shore, brace, and support structural elements during cutting and patching. Do not cut and patch structural elements in a manner that could change their load-carrying capacity or increase deflection.
2. Visual Elements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch exposed construction in a manner that would, in Engineer's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.

C. Manufacturer's Installation Instructions: Obtain and maintain on-site manufacturer's written recommendations and instructions for installation of specified products and equipment.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Comply with requirements specified in other Sections.

1. For projects requiring compliance with sustainable design and construction practices and procedures, use products for patching that comply with sustainable design requirements.

B. In-Place Materials: Use materials for patching identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.

1. If identical materials are unavailable or cannot be used, use materials that, when installed, will provide a match acceptable to Engineer for the visual and functional performance of in-place materials. Use materials that are not considered hazardous.

C. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

1. Use cleaning products that comply with Green Seal's GS-37, or if GS-37 is not applicable, use products that comply with the Florida Code of Regulations maximum allowable VOC levels.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Existing Conditions: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities mechanical and electrical systems, and other construction affecting the Work.

1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, gas service piping, and water-service piping; underground electrical services; and other utilities.
2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.

B. Examination and Acceptance of Conditions: Before proceeding with each component of the Work, examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.

1. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
2. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
3. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.

C. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.2 PREPARATION

A. Existing Utility Information: Furnish information to Owner that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.

B. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.

D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents, submit a request for information to Engineer in accordance to requirements in Section 013100 "Project Management and Coordination."

3.3 CONSTRUCTION LAYOUT

A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks and existing conditions. If discrepancies are discovered, notify Engineer promptly.

B. Engage a land surveyor experienced in laying out the Work, using the following accepted surveying practices.

1. Establish benchmarks and control points to set lines and levels at each story of construction and elsewhere as needed to locate each element of Project.
2. Establish limits on use of Project site.
3. Establish dimensions within tolerances indicated. Do not scale Drawings to obtain required dimensions.
4. Inform installers of lines and levels to which they must comply.
5. Check the location, level and plumb, of every major element as the Work progresses.
6. Notify Engineer when deviations from required lines and levels exceed allowable tolerances.
7. Close site surveys with an error of closure equal to or less than the standard established by authorities having jurisdiction.

C. Site Improvements: Locate and lay out site improvements, including pavements, grading, fill and topsoil placement, utility slopes, and rim and invert elevations.

D. Building Lines and Levels: Locate and lay out control lines and levels for structures, building foundations, column grids, and floor levels, including those required for mechanical and electrical work. Transfer survey markings and elevations for use with control lines and levels. Level foundations and piers from two or more locations.

E. Record Log: Maintain a log of layout control work. Record deviations from required lines and levels. Include beginning and ending dates and times of surveys, weather conditions, name and duty of each survey party member, and types of instruments and tapes used. Make the log available for reference by Engineer.

3.4 FIELD ENGINEERING

A. Reference Points: Locate existing permanent benchmarks, control points, and similar reference points before beginning the Work. Preserve and protect permanent benchmarks and control points during construction operations.

1. Do not change or relocate existing benchmarks or control points without prior written approval of Engineer. Report lost or destroyed permanent benchmarks or control points promptly. Report the need to relocate permanent benchmarks or control points to Engineer before proceeding.
2. Replace lost or destroyed permanent benchmarks and control points promptly. Base replacements on the original survey control points.

B. Benchmarks: Establish and maintain a minimum of two permanent benchmarks on Project site, referenced to data established by survey control points. Comply with authorities having jurisdiction for type and size of benchmark.

1. Record benchmark locations, with horizontal and vertical data, on Project Record Documents.
2. Where the actual location or elevation of layout points cannot be marked, provide temporary reference points sufficient to locate the Work.
3. Remove temporary reference points when no longer needed. Restore marked construction to its original condition.

C. Final Property Survey: Engage a land surveyor to prepare a final property survey showing significant features (real property) for Project. Include on the survey a certification, signed by land surveyor, that principal metes, bounds, lines, and levels of Project are accurately positioned as shown on the survey.

1. Show boundary lines, monuments, streets, site improvements and utilities, existing improvements and significant vegetation, adjoining properties, acreage, grade contours, and the distance and bearing from a site corner to a legal point.

3.5 INSTALLATION

A. Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.

1. Make vertical work plumb and make horizontal work level.
2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
3. Conceal pipes, ducts, and wiring in finished areas unless otherwise indicated.

B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.

C. Install products at the time and under conditions that will ensure satisfactory results as judged by Engineer. Maintain conditions required for product performance until Substantial Completion.

D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy of type expected for Project.

E. Sequence the Work and allow adequate clearances to accommodate movement of construction items onsite and placement in permanent locations.

F. Tools and Equipment: Select tools or equipment that minimize production of excessive noise levels.

G. Templates: Obtain and distribute to the parties involved templates for Work specified to be factory prepared and field installed. Check Shop Drawings of other portions of the Work to

confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.

H. Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately located and aligned with other portions of the Work. Where size and type of attachments are not indicated, verify size and type required for load conditions with manufacturer.

1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Engineer.
2. Allow for building/structure movement, including thermal expansion and contraction.
3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

I. Joints: Make joints of uniform width. Where joint locations in exposed Work are not indicated, arrange joints for the best visual effect, as judged by Engineer. Fit exposed connections together to form hairline joints.

J. Repair or remove and replace damaged, defective, or nonconforming Work.

1. Comply with Section 017700 "Closeout Procedures" for repairing or removing and replacing defective Work.

3.6 CUTTING AND PATCHING

A. General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.

1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.

B. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during installation or cutting and patching operations, by methods and with materials so as not to void existing warranties.

C. Temporary Support: Provide temporary support of Work to be cut.

D. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.

E. Adjacent Occupied Areas: Where interference with use of adjoining areas or interruption of free passage to adjoining areas is unavoidable, coordinate cutting and patching in accordance with requirements in Section 011000 "Summary."

F. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to prevent interruption to occupied areas.

G. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.

1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots neatly to minimum size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
3. Concrete: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
4. Excavating and Backfilling: Comply with requirements in applicable Sections where required by cutting and patching operations.
5. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.

H. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as practicable, as judged by Engineer. Provide materials and comply with installation requirements specified in other Sections, where applicable.

1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate physical integrity of installation.
2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.

    a. Clean piping, conduit, and similar features before applying paint or other finishing materials.
    b. Restore damaged pipe covering to its original condition.

3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.

    a. Where patching occurs in a painted surface, prepare substrate and apply primer and intermediate paint coats appropriate for substrate over the patch, and apply final paint coat over entire unbroken surface containing the patch, corner to corner of wall and edge to edge of ceiling. Provide additional coats until patch blends with adjacent surfaces.

I. Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials from adjacent finished surfaces.

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3.7 PROGRESS CLEANING

A. Clean Project site and work areas daily, including common areas. Enforce requirements strictly. Dispose of materials lawfully.

1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
2. Do not hold waste materials more than seven days during normal weather or three days if the temperature is expected to rise above 80 deg F .
3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.

    a. Use containers intended for holding waste materials of type to be stored.

B. Site: Maintain Project site free of waste materials and debris.

C. Work Areas: Clean areas where Work is in progress to the level of cleanliness necessary for proper execution of the Work.

1. Remove liquid spills promptly.
2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.

D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.

E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.

F. Exposed Surfaces: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

G. Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways.

H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.

I. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.

J. Limiting Exposures: Supervise construction operations to ensure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

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3.8 STARTING AND ADJUSTING

A. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.

B. Adjust equipment for proper operation. Adjust operating components for proper operation without binding.

C. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

D. Manufacturer's Field Service: Comply with qualification requirements in Section 014000 "Quality Requirements."

3.9 PROTECTION AND REPAIR OF INSTALLED CONSTRUCTION

A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.

B. Repair Work previously completed and subsequently damaged during construction period Repair to like-new condition.

C. Protection of Existing Items: Provide protection and ensure that existing items to remain undisturbed by construction are maintained in condition that existed at commencement of the Work.

D. Comply with manufacturer's written instructions for temperature and relative humidity.

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SECTION 017419 - CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for the following:

1. Salvaging nonhazardous demolition and construction waste.
2. Recycling nonhazardous demolition and construction waste.
3. Disposing of nonhazardous demolition and construction waste.

1.3 DEFINITIONS

A. Construction Waste: Building, structure, and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.

B. Demolition Waste: Building, structure, and site improvement materials resulting from demolition operations.

C. Disposal: Removal of demolition or construction waste and subsequent salvage, sale, recycling, or deposit in landfill, incinerator acceptable to authorities having jurisdiction, or designated spoil areas on Owner’s property.

D. Recycle: Recovery of demolition or construction waste for subsequent processing in preparation for reuse.

E. Salvage: Recovery of demolition or construction waste and subsequent sale or reuse in another facility.

F. Salvage and Reuse: Recovery of demolition or construction waste and subsequent incorporation into the Work.

1.4 MATERIALS OWNERSHIP

A. Unless otherwise indicated, demolition and construction waste becomes property of Contractor.

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1.5 ACTION SUBMITTALS

A. Waste Management Plan: Submit plan within 7 days of date established for the Notice to Proceed.

1.6 INFORMATIONAL SUBMITTALS

A. Waste Reduction Progress Reports: Concurrent with each Application for Payment, submit report. Use Owner's designated form. Include the following information:

1. Material category.
2. Generation point of waste.
3. Total quantity of waste in tons.
4. Quantity of waste salvaged, both estimated and actual in tons.
5. Quantity of waste recycled, both estimated and actual in tons.
6. Total quantity of waste recovered (salvaged plus recycled) in tons.
7. Total quantity of waste recovered (salvaged plus recycled) as a percentage of total waste.

B. Waste Reduction Calculations: Before request for Substantial Completion, submit calculated end-of-Project rates for salvage, recycling, and disposal as a percentage of total waste generated by the Work.

C. Recycling and Processing Facility Records: Indicate receipt and acceptance of recyclable waste by recycling and processing facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.

D. Landfill and Incinerator Disposal Records: Indicate receipt and acceptance of waste by landfills and incinerator facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.

1.7 QUALITY ASSURANCE

A. Waste Management Coordinator Qualifications: Experienced firm, or individual employed and assigned by General Contractor, with a record of successful waste management coordination of projects with similar requirements. Superintendent may serve as Waste Management Coordinator.

B. Regulatory Requirements: Comply with transportation and disposal regulations of authorities having jurisdiction.

1.8 WASTE MANAGEMENT PLAN

A. General: Develop a waste management plan according to requirements in this Section. Plan shall consist of waste identification and waste reduction work plan. Distinguish between demolition and construction waste. Indicate quantities by weight or volume, but use same units of measure throughout waste management plan.

B. Waste Identification: Indicate anticipated types and quantities of demolition site-clearing and construction waste generated by the Work. Use Owner's designated form . Include estimated quantities and assumptions for estimates.

C. Waste Reduction Work Plan: List each type of waste and whether it will be salvaged, recycled, or disposed of in landfill or incinerator. Use Owner's designated form . Include points of waste generation, total quantity of each type of waste, quantity for each means of recovery, and handling and transportation procedures.
   1. Recycled Materials: Include list of local receivers and processors and type of recycled materials each will accept. Include names, addresses, and telephone numbers.
   2. Disposed Materials: Indicate how and where materials will be disposed of. Include name, address, and telephone number of each landfill and incinerator facility.
   3. Handling and Transportation Procedures: Include method that will be used for separating recyclable waste including sizes of containers, container labeling, and designated location where materials separation will be performed.

PART 2 - EXECUTION

2.1 PLAN IMPLEMENTATION

A. General: Implement approved waste management plan. Provide handling, containers, storage, signage, transportation, and other items as required to implement waste management plan during the entire duration of the Contract.

B. Training: Train workers, subcontractors, and suppliers on proper waste management procedures, as appropriate for the Work.

   1. Distribute waste management plan to everyone concerned within three days of submittal return.
   2. Distribute waste management plan to entities when they first begin work on-site. Review plan procedures and locations established for salvage, recycling, and disposal.

C. Site Access and Temporary Controls: Conduct waste management operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

   1. Designate and label specific areas on Project site necessary for separating materials that are to be salvaged and recycled.

2.2 RECYCLING DEMOLITION AND CONSTRUCTION WASTE, GENERAL

A. General: Recycle paper and beverage containers used by on-site workers.

B. Recycling Incentives: Revenues, savings, rebates, tax credits, and other incentives received for recycling waste materials shall accrue to Contractor.

C. Preparation of Waste: Prepare and maintain recyclable waste materials according to recycling or reuse facility requirements. Maintain materials free of dirt, adhesives, solvents, petroleum contamination, and other substances deleterious to the recycling process.

D. Procedures: Separate recyclable waste from other waste materials, trash, and debris. Separate recyclable waste by type at Project site to the maximum extent practical according to approved construction waste management plan.

1. Provide appropriately marked containers or bins for controlling recyclable waste until removed from Project site. Include list of acceptable and unacceptable materials at each container and bin.

    a. Inspect containers and bins for contamination and remove contaminated materials if found.

2. Stockpile processed materials on-site without intermixing with other materials. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
3. Stockpile materials away from construction area. Do not store within drip line of remaining trees.
4. Store components off the ground and protect from the weather.
5. Remove recyclable waste from Owner's property and transport to recycling receiver or processor as often as required to prevent overfilling bins.

2.3 RECYCLING DEMOLITION WASTE

A. Concrete: Remove reinforcement and other metals from concrete and sort with other metals.

1. Pulverize concrete to maximum 4-inch size.

B. Wood Materials: Sort and stack members according to size, type, and length. Separate lumber, engineered wood products, panel products, and treated wood materials.

C. Metals: Separate metals by type.

1. Structural Steel: Stack members according to size, type of member, and length.
2. Remove and dispose of bolts, nuts, washers, and other rough hardware.

D. Piping: Reduce piping to straight lengths and store by material and size. Separate supports, hangers, valves, sprinklers, and other components by material and size.

E. Conduit: Reduce conduit to straight lengths and store by material and size.

2.4 RECYCLING CONSTRUCTION WASTE

A. Packaging:

1. Cardboard and Boxes: Break down packaging into flat sheets. Bundle and store in a dry location.
2. Polystyrene Packaging: Separate and bag materials.

3. Pallets: As much as possible, require deliveries using pallets to remove pallets from Project site. For pallets that remain on-site, break down pallets into component wood pieces and comply with requirements for recycling wood.
4. Crates: Break down crates into component wood pieces and comply with requirements for recycling wood.

B. Wood Materials:

1. Clean Cut-Offs of Lumber: Grind or chip into small pieces.
2. Clean Sawdust: Bag sawdust that does not contain painted or treated wood.

C. Paint: Seal containers and store by type.

2.5 DISPOSAL OF WASTE

A. General: Except for items or materials to be salvaged or recycled, remove waste materials from Project site and legally dispose of them in a landfill or incinerator acceptable to authorities having jurisdiction.

1. Except as otherwise specified, do not allow waste materials that are to be disposed of accumulate on-site.
2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

B. Burning: Do not burn waste materials.

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SECTION 017700 - CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for Contract closeout, including, but not limited to, the following:

1. Substantial Completion procedures.
2. Final completion procedures.
3. Warranties.
4. Final cleaning.

B. Related Requirements:

1. Section 012900 “Payment Procedures” for requirements for Applications for Payment for Substantial Completion and Final Completion.
2. Section 013233 "Photographic Documentation" for submitting Final Completion construction photographic documentation.
3. Section 017823 "Operation and Maintenance Data" for additional operation and maintenance manual requirements.
4. Section 017839 "Project Record Documents" for submitting Record Drawings, Record Specifications, and Record Product Data.
5. Section 017900 "Demonstration and Training" for requirements to train the Owner's maintenance personnel to adjust, operate, and maintain products, equipment, and systems.

1.3 DEFINITIONS

A. List of Incomplete Items: Contractor-prepared list of items to be completed or corrected, prepared for the Engineer’s use prior to Engineer’s inspection, to determine if the Work is substantially complete.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of cleaning agent.

B. Contractor's List of Incomplete Items: Initial submittal at Substantial Completion.

C. Certified List of Incomplete Items: Final submittal at Final Completion.

1.5 CLOSEOUT SUBMITTALS

A. Certificate of Insurance: For continuing coverage.

1.6 MAINTENANCE MATERIAL SUBMITTALS

A. Schedule of Maintenance Material Items: For maintenance material submittal items required by other Sections.

1.7 SUBSTANTIAL COMPLETION PROCEDURES

A. Contractor's List of Incomplete Items: Prepare and submit a list of items to be completed and corrected (Contractor's “punch list”), indicating the value of each item on the list and reasons why the Work is incomplete.

B. Submittals Prior to Substantial Completion: Complete the following a minimum of 10 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.

1. Submit closeout submittals specified in other Division 01 Sections, including Project Record Documents, operation and maintenance manuals, damage or settlement surveys, property surveys, and similar final record information.
2. Submit closeout submittals specified in individual Sections, including specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
3. Submit maintenance material submittals specified in individual Sections, including tools, spare parts, extra materials, and similar items, and deliver to location designated by Engineer. Label with manufacturer's name and model number.
4. Submit testing, adjusting, and balancing records.
5. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.

C. Procedures Prior to Substantial Completion: Complete the following a minimum of 10 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.

1. Advise Owner of pending insurance changeover requirements.
2. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
3. Complete startup and testing of systems and equipment.
4. Perform preventive maintenance on equipment used prior to Substantial Completion.
5. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems. Submit demonstration and training video recordings specified in Section 017900 "Demonstration and Training."
6. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
7. Complete final cleaning requirements.

8. Touch up paint and otherwise repair and restore marred exposed finishes to eliminate visual defects.

D. Inspection: Submit a written request for inspection to determine Substantial Completion a minimum of 10 days prior to date the Work will be completed and ready for final inspection and tests. On receipt of request, Engineer will either proceed with inspection or notify Contractor of unfulfilled requirements. Engineer will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Engineer, that must be completed or corrected before certificate will be issued.

1. Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
2. Results of completed inspection will form the basis of requirements for Final Completion.

1.8 FINAL COMPLETION PROCEDURES

A. Submittals Prior to Final Completion: Before requesting final inspection for determining Final Completion, complete the following:

1. Submit a final Application for Payment in accordance with Section 012900 "Payment Procedures."
2. Certified List of Incomplete Items: Submit certified copy of Engineer's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Engineer. Certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
3. Certificate of Insurance: Submit evidence of final, continuing insurance coverage complying with insurance requirements.
4. Submit Final Completion photographic documentation.

B. Inspection: Submit a written request for final inspection to determine acceptance a minimum of 10 days prior to date the Work will be completed and ready for final inspection and tests. On receipt of request, Engineer will either proceed with inspection or notify Contractor of unfulfilled requirements. Engineer will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.

1. Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.9 LIST OF INCOMPLETE ITEMS

A. Organization of List: Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.

1. Organize list of spaces in sequential order, listed by space number.
2. Organize items applying to each space by major element.

3. Include the following information at the top of each page:

    a. Project name.
    b. Date.
    c. Name of Engineer.
    d. Name of Contractor.
    e. Page number.

4. Submit list of incomplete items in the following format:

    a. MS Excel Electronic File. Engineer will return annotated file.

1.10 SUBMITTAL OF PROJECT WARRANTIES

A. Time of Submittal: Submit written warranties on request of Engineer for designated portions of the Work where warranties are indicated to commence on dates other than date of Substantial Completion, or when delay in submittal of warranties might limit Owner's rights under warranty.

B. Warranty Electronic File: Provide warranties and bonds in PDF format. Assemble complete warranty and bond submittal package into a single electronic PDF file with bookmarks enabling navigation to each item. Provide bookmarked table of contents at beginning of document.

    1. Submit on digital media acceptable to Engineer by email to Engineer.

C. Provide copies of each warranty to include in operation and maintenance manuals.

END OF SECTION 017700

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SECTION 017823 - OPERATION AND MAINTENANCE DATA

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for preparing operation and maintenance manuals, including the following:

1. Operation and maintenance documentation directory manuals.
2. Emergency manuals.
3. Systems and equipment operation manuals.
4. Systems and equipment maintenance manuals.
5. Product maintenance manuals.

B. Related Requirements:

1. Section 013300 "Submittal Procedures" for submitting copies of submittals for operation and maintenance manuals.

1.3 DEFINITIONS

A. System: An organized collection of parts, equipment, or subsystems united by regular interaction.

B. Subsystem: A portion of a system with characteristics similar to a system.

1.4 CLOSEOUT SUBMITTALS

A. Submit operation and maintenance manuals indicated. Provide content for each manual as specified in individual Specification Sections, and as reviewed and approved at the time of Section submittals. Submit reviewed manual content formatted and organized as required by this Section.

1. Engineer will comment on whether content of operation and maintenance submittals is acceptable.
2. Where applicable, clarify and update reviewed manual content to correspond to revisions and field conditions.

B. Format: Submit operation and maintenance manuals in the following format:

1. Submit on digital media acceptable to Engineer by email to Engineer. Enable reviewer comments on draft submittals.

C. Initial Manual Submittal: Submit draft copy of each manual at least 30 days before commencing demonstration and training. Engineer will comment on whether general scope and content of manual are acceptable.

D. Final Manual Submittal: Submit each manual in final form prior to requesting inspection for Substantial Completion and at least 15 days before commencing demonstration and training. Engineer will return copy with comments.

1. Correct or revise each manual to comply with Engineer's comments. Submit copies of each corrected manual within 15 days of receipt of Engineer's comments and prior to commencing demonstration and training.

E. Comply with Section 017700 "Closeout Procedures" for schedule for submitting operation and maintenance documentation.

1.5 FORMAT OF OPERATION AND MAINTENANCE MANUALS

A. Manuals, Electronic Files: Submit manuals in the form of a multiple file composite electronic PDF file for each manual type required.

1. Electronic Files: Use electronic files prepared by manufacturer where available. Where scanning of paper documents is required, configure scanned file for minimum readable file size.
2. File Names and Bookmarks: Bookmark individual documents based on file names. Name document files to correspond to system, subsystem, and equipment names used in manual directory and table of contents. Group documents for each system and subsystem into individual composite bookmarked files, then create composite manual, so that resulting bookmarks reflect the system, subsystem, and equipment names in a readily navigated file tree. Configure electronic manual to display bookmark panel on opening file.

1.6 REQUIREMENTS FOR EMERGENCY, OPERATION, AND MAINTENANCE MANUALS

A. Organization of Manuals: Unless otherwise indicated, organize each manual into a separate section for each system and subsystem, and a separate section for each piece of equipment not part of a system. Each manual shall contain the following materials, in the order listed:

1. Title page.
2. Table of contents.
3. Manual contents.

B. Title Page: Include the following information:

1. Subject matter included in manual.
2. Name and address of Project.
3. Name and address of Owner.

4. Date of submittal.
5. Name and contact information for Contractor.
6. Name and contact information for Engineer.
7. Cross-reference to related systems in other operation and maintenance manuals.

C. Table of Contents: List each product included in manual, identified by product name, indexed to the content of the volume, and cross-referenced to Specification Section number in Project Manual.

1. If operation or maintenance documentation requires more than one volume to accommodate data, include comprehensive table of contents for all volumes in each volume of the set.

D. Manual Contents: Organize into sets of manageable size. Arrange contents alphabetically by system, subsystem, and equipment. If possible, assemble instructions for subsystems, equipment, and components of one system into a single binder.

E. Identification: In the documentation directory and in each operation and maintenance manual, identify each system, subsystem, and piece of equipment with same designation used in the Contract Documents. If no designation exists, assign a designation according to ASHRAE Guideline 4, "Preparation of Operating and Maintenance Documentation for Building Systems."

1.7 OPERATION AND MAINTENANCE DOCUMENTATION DIRECTORY MANUAL

A. Operation and Maintenance Documentation Directory: Prepare a separate manual that provides an organized reference to emergency, operation, and maintenance manuals. List items and their location to facilitate ready access to desired information. Include the following:

1. List of Systems and Subsystems: List systems alphabetically. Include references to operation and maintenance manuals that contain information about each system.
2. List of Equipment: List equipment for each system, organized alphabetically by system. For pieces of equipment not part of system, list alphabetically in separate list.
3. Tables of Contents: Include a table of contents for each emergency, operation, and maintenance manual.

1.8 EMERGENCY MANUALS

A. Emergency Manual: Assemble a complete set of emergency information indicating procedures for use by emergency personnel and by Owner's operating personnel for types of emergencies indicated.

B. Content: Organize manual into a separate section for each of the following:

1. Type of emergency.
2. Emergency instructions.
3. Emergency procedures.

C. Type of Emergency: Where applicable for each type of emergency indicated below, include instructions and procedures for each system, subsystem, piece of equipment, and component:

1. Fire.
2. Flood.
3. Power failure.
4. System, subsystem, or equipment failure.

D. Emergency Instructions: Describe and explain warnings, trouble indications, error messages, and similar codes and signals. Include responsibilities of Owner's operating personnel for notification of Installer, supplier, and manufacturer to maintain warranties.

E. Emergency Procedures: Include the following, as applicable:

1. Instructions on stopping.
2. Shutdown instructions for each type of emergency.
3. Operating instructions for conditions outside normal operating limits.
4. Required sequences for electric or electronic systems.
5. Special operating instructions and procedures.

1.9 SYSTEMS AND EQUIPMENT OPERATION MANUALS

A. Systems and Equipment Operation Manual: Assemble a complete set of data indicating operation of each system, subsystem, and piece of equipment not part of a system. Include information required for daily operation and management, operating standards, and routine and special operating procedures.

1. Engage a factory-authorized service representative to assemble and prepare information for each system, subsystem, and piece of equipment not part of a system.
2. Prepare a separate manual for each system and subsystem, in the form of an instructional manual for use by Owner's operating personnel.

B. Content: In addition to requirements in this Section, include operation data required in individual Specification Sections and the following information:

1. System, subsystem, and equipment descriptions. Use designations for systems and equipment indicated on Contract Documents.
2. Performance and design criteria if Contractor has delegated design responsibility.
3. Operating standards.
4. Operating procedures.
5. Operating logs.
6. Wiring diagrams.
7. Control diagrams.
8. Piped system diagrams.
9. Precautions against improper use.
10. License requirements including inspection and renewal dates.

C. Descriptions: Include the following:

1. Product name and model number. Use designations for products indicated on Contract Documents.
2. Manufacturer's name.
3. Equipment identification with serial number of each component.
4. Equipment function.
5. Operating characteristics.
6. Limiting conditions.
7. Performance curves.
8. Engineering data and tests.
9. Complete nomenclature and number of replacement parts.

D. Operating Procedures: Include the following, as applicable:

1. Startup procedures.
2. Equipment or system break-in procedures.
3. Routine and normal operating instructions.
4. Regulation and control procedures.
5. Instructions on stopping.
6. Normal shutdown instructions.
7. Seasonal and weekend operating instructions.
8. Required sequences for electric or electronic systems.
9. Special operating instructions and procedures.

E. Systems and Equipment Controls: Describe the sequence of operation, and diagram controls as installed.

F. Piped Systems: Diagram piping as installed and identify color coding where required for identification.

1.10 SYSTEMS AND EQUIPMENT MAINTENANCE MANUALS

A. Systems and Equipment Maintenance Manuals: Assemble a complete set of data indicating maintenance of each system, subsystem, and piece of equipment not part of a system. Include manufacturers' maintenance documentation, preventive maintenance procedures and frequency, repair procedures, wiring and systems diagrams, lists of spare parts, and warranty information.

1. Engage a factory-authorized service representative to assemble and prepare information for each system, subsystem, and piece of equipment not part of a system.
2. Prepare a separate manual for each system and subsystem, in the form of an instructional manual for use by Owner's operating personnel.

B. Content: For each system, subsystem, and piece of equipment not part of a system, include source information, manufacturers' maintenance documentation, maintenance procedures, maintenance and service schedules, spare parts list and source information, maintenance service contracts, and warranties and bonds as described below.

C. Manufacturers' Maintenance Documentation: Include the following information for each component part or piece of equipment:

1. Standard maintenance instructions and bulletins; include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.

    a. Prepare supplementary text if manufacturers' standard printed data are not available and where the information is necessary for proper operation and maintenance of equipment or systems.

2. Drawings, diagrams, and instructions required for maintenance, including disassembly and component removal, replacement, and assembly.
3. Identification and nomenclature of parts and components.
4. List of items recommended to be stocked as spare parts.

D. Maintenance Procedures: Include the following information and items that detail essential maintenance procedures:

1. Test and inspection instructions.
2. Troubleshooting guide.
3. Precautions against improper maintenance.
4. Disassembly; component removal, repair, and replacement; and reassembly instructions.
5. Aligning, adjusting, and checking instructions.
6. Demonstration and training video recording, if available.

E. Maintenance and Service Schedules: Include service and lubrication requirements, list of required lubricants for equipment, and separate schedules for preventive and routine maintenance and service with standard time allotment.

1. Scheduled Maintenance and Service: Tabulate actions for daily, weekly, monthly, quarterly, semiannual, and annual frequencies.
2. Maintenance and Service Record: Include manufacturers' forms for recording maintenance.

F. Spare Parts List and Source Information: Include lists of replacement and repair parts, with parts identified and cross-referenced to manufacturers' maintenance documentation and local sources of maintenance materials and related services.

G. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.

1. Include procedures to follow and required notifications for warranty claims.

H. Drawings: Prepare drawings supplementing manufacturers' printed data to illustrate the relationship of component parts of equipment and systems and to illustrate control sequence and flow diagrams. Coordinate these drawings with information contained in record Drawings to ensure correct illustration of completed installation.

1. Do not use original project record documents as part of maintenance manuals.

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1.11 PRODUCT MAINTENANCE MANUALS

A. Product Maintenance Manual: Assemble a complete set of maintenance data indicating care and maintenance of each product, material, and finish incorporated into the Work.

B. Source Information: List each product included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual and drawing or schedule designation or identifier where applicable.

C. Product Information: Include the following, as applicable:

1. Product name and model number.
2. Manufacturer's name.
3. Color, pattern, and texture.
4. Material and chemical composition.
5. Reordering information for specially manufactured products.

D. Maintenance Procedures: Include manufacturer's written recommendations and the following:

1. Inspection procedures.
2. Types of cleaning agents to be used and methods of cleaning.
3. List of cleaning agents and methods of cleaning detrimental to product.
4. Schedule for routine cleaning and maintenance.
5. Repair instructions.

E. Repair Materials and Sources: Include lists of materials and local sources of materials and related services.

F. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.

1. Include procedures to follow and required notifications for warranty claims.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

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SECTION 017839 - PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for Project Record Documents, including the following:

1. Record Drawings.
2. Record Product Data.

B. Related Requirements:

1. Section 012900 “Payment Procedures” for maintaining and exhibiting project record documents as a prerequisite for progress payments.
2. Section 017300 "Execution" for final property survey.
3. Section 017700 "Closeout Procedures" for general closeout procedures.
4. Section 017823 "Operation and Maintenance Data" for operation and maintenance manual requirements.

1.3 CLOSEOUT SUBMITTALS

A. Record Drawings: Comply with the following:

1. Number of Copies: Submit one set of marked-up record prints.

a. Final Submittal:

1) Submit PDF electronic files of scanned Record Prints and three sets of file prints.

B. Record Product Data: Submit annotated PDF electronic files and directories of each submittal.

1. Where record Product Data are required as part of operation and maintenance manuals, submit duplicate marked-up Product Data as a component of manual.

1.4 RECORD DRAWINGS

A. Record Prints: Maintain one set of marked-up paper copies of the Contract Drawings and Shop Drawings, incorporating new and revised drawings as modifications are issued.

1. Preparation: Mark record prints to show the actual installation, where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to provide information for preparation of corresponding marked-up record prints.

    a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
    b. Accurately record information in an acceptable drawing technique.
    c. Record data as soon as possible after obtaining it.
    d. Record and check the markup before enclosing concealed installations.
    e. Cross-reference record prints to corresponding photographic documentation.

2. Content: Types of items requiring marking include, but are not limited to, the following:

    a. Dimensional changes to Drawings.
    b. Revisions to details shown on Drawings.
    c. Depths of foundations.
    d. Locations and depths of underground utilities.
    e. Revisions to routing of piping and conduits.
    f. Revisions to electrical circuitry.
    g. Actual equipment locations.
    h. Duct size and routing.
    i. Locations of concealed internal utilities.
    j. Changes made by Change Order.
    k. Changes made following Engineer's written orders.
    l. Details not on the original Contract Drawings.
    m. Field records for variable and concealed conditions.
    n. Record information on the Work that is shown only schematically.

3. Mark the Contract Drawings and Shop Drawings completely and accurately. Use personnel proficient at recording graphic information in production of marked-up record prints.
4. Mark record prints with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.
5. Mark important additional information that was either shown schematically or omitted from original Drawings.
6. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.

B. Record Digital Data Files: Immediately before inspection for Certificate of Substantial Completion, review marked-up record prints with Engineer. When authorized, prepare a full set of corrected digital data files of the Contract Drawings, as follows:
    1. Format: Annotated PDF electronic file with comment function enabled.
    2. Incorporate changes and additional information previously marked on record prints. Delete, redraw, and add details and notations where applicable.
    3. Refer instances of uncertainty to Engineer for resolution.
    4. Engineer will furnish Contractor with one set of digital data files of the Contract Drawings for use in recording information.

a. See Section 013100 "Project Management and Coordination" for requirements related to use of Engineer's digital data files.
b. Engineer will provide data file layer information. Record markups in separate layers.

C. Format: Identify and date each Record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.

1. Record Prints: Organize record prints into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.
2. Format: Annotated PDF electronic file.
3. Record Digital Data Files: Organize digital data information into separate electronic files that correspond to each sheet of the Contract Drawings. Name each file with the sheet identification. Include identification in each digital data file.
4. Identification: As follows:

a. Project name.
b. Date.
c. Designation "PROJECT RECORD DRAWINGS."
d. Name of Engineer.
e. Name of Contractor.

1.5 RECORD PRODUCT DATA

A. Recording: Maintain one copy of each submittal during the construction period for Project Record Document purposes. Post changes and revisions to Project Record Documents as they occur; do not wait until end of Project.

B. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.

1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
3. Note related Change Orders and Record Drawings where applicable.

C. Format: Submit Record Product Data as annotated PDF electronic file.

1. Include Record Product Data directory organized by Specification Section number and title, electronically linked to each item of Record Product Data.

1.6 MAINTENANCE OF RECORD DOCUMENTS

A. Maintenance of Record Documents: Store Record Documents in the field office apart from the Contract Documents used for construction. Do not use Project Record Documents for construction purposes. Maintain Record Documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to Project Record Documents

for Engineer's reference during normal working hours. As a prerequisite for monthly progress payments, exhibit the updated record documents for review by Owner and Engineer for accuracy and completeness.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION 017839

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SECTION 017900 - DEMONSTRATION AND TRAINING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for instructing Owner's personnel, including the following:

1. Instruction in operation and maintenance of systems, subsystems, and equipment.
2. Demonstration and training video recordings.

1.3 INFORMATIONAL SUBMITTALS

A. Instruction Program: Submit outline of instructional program for demonstration and training, including a list of training modules and a schedule of proposed dates, times, length of instruction time, and instructors' names for each training module. Include learning objective and outline for each training module.

1. Indicate proposed training modules using manufacturer-produced demonstration and training video recordings for systems, equipment, and products in lieu of video recording of live instructional module.

B. Qualification Data: For instructor.

C. Attendance Record: For each training module, submit list of participants and length of instruction time.

D. Evaluations: For each participant and for each training module, submit results and documentation of performance-based test.

1.4 CLOSEOUT SUBMITTALS

A. Demonstration and Training Video Recordings: Submit two copies within seven days of end of each training module.

1. Identification: On each copy, provide an applied label with the following information:

a. Name of Project.
b. Name and address of videographer.
c. Name of Engineer.

d. Name of Contractor.
e. Date of video recording.

2. Transcript: Prepared and bound in format matching operation and maintenance manuals. Mark appropriate identification on front and spine of each binder. Include a cover sheet with same label information as the corresponding video recording. Include name of Project and date of video recording on each page.
3. Transcript: Prepared in PDF electronic format. Include a cover sheet with same label information as the corresponding video recording and a table of contents with links to corresponding training components. Include name of Project and date of video recording on each page.
4. At completion of training, submit complete training manual(s) for Owner's use prepared in same paper and PDF file format required for operation and maintenance manuals specified in Section 017823 "Operation and Maintenance Data."

1.5 QUALITY ASSURANCE

A. Facilitator Qualifications: A firm or individual experienced in training or educating maintenance personnel in a training program similar in content and extent to that indicated for this Project, and whose work has resulted in training or education with a record of successful learning performance.

B. Instructor Qualifications: A factory-authorized service representative, complying with requirements in Section 014000 "Quality Requirements," experienced in operation and maintenance procedures and training.

C. Videographer Qualifications: A professional videographer who is experienced photographing demonstration and training events similar to those required.

D. Preinstruction Conference: Conduct conference at Project site to comply with requirements in Section 013100 "Project Management and Coordination." Review methods and procedures related to demonstration and training including, but not limited to, the following:

1. Inspect and discuss locations and other facilities required for instruction.
2. Review and finalize instruction schedule and verify availability of educational materials, instructors' personnel, audiovisual equipment, and facilities needed to avoid delays.
3. Review required content of instruction.
4. For instruction that must occur outside, review weather and forecasted weather conditions and procedures to follow if conditions are unfavorable.

1.6 COORDINATION

A. Coordinate instruction schedule with Owner's operations. Adjust schedule as required to minimize disrupting Owner's operations and to ensure availability of Owner's personnel.

B. Coordinate instructors, including providing notification of dates, times, length of instruction time, and course content.

C. Coordinate content of training modules with content of approved emergency, operation, and maintenance manuals. Do not submit instruction program until operation and maintenance data have been reviewed and approved by Engineer.

1.7 INSTRUCTION PROGRAM

A. Program Structure: Develop an instruction program that includes individual training modules for each system and for equipment not part of a system, as required by individual Specification Sections.

B. Training Modules: Develop a learning objective and teaching outline for each module. Include a description of specific skills and knowledge that participant is expected to master. For each module, include instruction for the following as applicable to the system, equipment, or component:

1. Basis of System Design, Operational Requirements, and Criteria: Include the following:

    a. System, subsystem, and equipment descriptions.
    b. Performance and design criteria if Contractor is delegated design responsibility.
    c. Operating standards.
    d. Regulatory requirements.
    e. Equipment function.
    f. Operating characteristics.
    g. Limiting conditions.
    h. Performance curves.

2. Documentation: Review the following items in detail:

    a. Emergency manuals.
    b. Systems and equipment operation manuals.
    c. Systems and equipment maintenance manuals.
    d. Product maintenance manuals.
    e. Project Record Documents.
    f. Identification systems.
    g. Warranties and bonds.
    h. Maintenance service agreements and similar continuing commitments.

3. Emergencies: Include the following, as applicable:

    a. Instructions on meaning of warnings, trouble indications, and error messages.
    b. Instructions on stopping.
    c. Shutdown instructions for each type of emergency.
    d. Operating instructions for conditions outside of normal operating limits.
    e. Sequences for electric or electronic systems.
    f. Special operating instructions and procedures.

4. Operations: Include the following, as applicable:

    a. Startup procedures.

b. Equipment or system break-in procedures.
c. Routine and normal operating instructions.
d. Regulation and control procedures.
e. Control sequences.
f. Safety procedures.
g. Instructions on stopping.
h. Normal shutdown instructions.
i. Operating procedures for emergencies.
j. Operating procedures for system, subsystem, or equipment failure.
k. Seasonal and weekend operating instructions.
l. Required sequences for electric or electronic systems.
m. Special operating instructions and procedures.

5. Adjustments: Include the following:

a. Alignments.
b. Checking adjustments.
c. Noise and vibration adjustments.
d. Economy and efficiency adjustments.

6. Troubleshooting: Include the following:

a. Diagnostic instructions.
b. Test and inspection procedures.

7. Maintenance: Include the following:

a. Inspection procedures.
b. Types of cleaning agents to be used and methods of cleaning.
c. List of cleaning agents and methods of cleaning detrimental to product.
d. Procedures for routine cleaning.
e. Procedures for preventive maintenance.
f. Procedures for routine maintenance.
g. Instruction on use of special tools.

8. Repairs: Include the following:

a. Diagnosis instructions.
b. Repair instructions.
c. Disassembly; component removal, repair, and replacement; and reassembly instructions.
d. Instructions for identifying parts and components.
e. Review of spare parts needed for operation and maintenance.

1.8 PREPARATION

A. Assemble educational materials necessary for instruction, including documentation and training module. Assemble training modules into a training manual organized in coordination with requirements in Section 017823 "Operation and Maintenance Data."

B. Set up instructional equipment at instruction location.

1.9 INSTRUCTION

A. Facilitator: Engage a qualified facilitator to prepare instruction program and training modules, to coordinate instructors, and to coordinate between Contractor and Owner for number of participants, instruction times, and location.

B. Engage qualified instructors to instruct Owner's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system.

1. Engineer will furnish an instructor to describe basis of system design, operational requirements, criteria, and regulatory requirements.
2. Owner will furnish an instructor to describe Owner's operational philosophy.
3. Owner will furnish Contractor with names and positions of participants.

C. Scheduling: Provide instruction at mutually agreed-on times. For equipment that requires seasonal operation, provide similar instruction at start of each season.

1. Schedule training with Owner, through Engineer, with at least seven days' advance notice.

D. Training Location and Reference Material: Conduct training on-site in the completed and fully operational facility using the actual equipment in-place. Conduct training using final operation and maintenance data submittals.

E. Evaluation: At conclusion of each training module, assess and document each participant's mastery of module by use of an oral or a demonstration performance-based test.

F. Cleanup: Collect used and leftover educational materials and remove from Project site. Remove instructional equipment. Restore systems and equipment to condition existing before initial training use.

1.10 DEMONSTRATION AND TRAINING VIDEO RECORDINGS

A. General: Engage a qualified commercial videographer to record demonstration and training video recordings. Record each training module separately. Include classroom instructions and demonstrations, board diagrams, and other visual aids, but not student practice.

1. At beginning of each training module, record each chart containing learning objective and lesson outline.

B. Digital Video Recordings: Provide high-resolution, digital video in MPEG format, produced by a digital camera with minimum sensor resolution of 12 megapixels and capable of recording in full HD mode.

1. Submit video recordings on thumb drive.
2. File Hierarchy: Organize folder structure and file locations according to Project Manual table of contents. Provide complete screen-based menu.

3. File Names: Utilize file names based on name of equipment generally described in video segment, as identified in Project specifications.
4. Contractor and Installer Contact File: Using appropriate software, create a file for inclusion on the equipment demonstration and training recording that describes the following for each Contractor involved on the Project, arranged according to Project Manual table of contents:

    a. Name of Contractor/Installer.
    b. Business address.
    c. Business phone number.
    d. Point of contact.
    e. Email address.

C. Recording: Mount camera on tripod before starting recording, unless otherwise necessary to adequately cover area of demonstration and training. Display continuous running time.

1. Film training session(s) in segments not to exceed 15 minutes.

    a. Produce segments to present a single significant piece of equipment per segment.
    b. Organize segments with multiple pieces of equipment to follow order of Project Manual table of contents.
    c. Where a training session on a particular piece of equipment exceeds 15 minutes, stop filming and pause training session. Begin training session again upon commencement of new filming segment.

D. Light Levels: Verify light levels are adequate to properly light equipment. Verify equipment markings are clearly visible prior to recording.

1. Furnish additional portable lighting as required.

E. Narration: Describe scenes on video recording by audio narration by microphone while video recording is recorded. Include description of items being viewed.

F. Transcript: Provide a transcript of the narration. Display images and running time captured from videotape opposite the corresponding narration segment.

G. Preproduced Video Recordings: Provide video recordings used as a component of training modules in same format as recordings of live training.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION 017900

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SECTION 024116 - STRUCTURE DEMOLITION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Demolition and removal of buildings and site improvements.
2. Abandoning in place below-grade construction.
3. Disconnecting, capping or sealing, and abandoning in-place site utilities.
4. Salvaging items for reuse by Owner.

1.3 DEFINITIONS

A. Remove: Detach items from existing construction and dispose of them off-site unless indicated to be salvaged.

B. Remove Hazardous Materials: Isolate and remove hazardous materials from existing construction and properly dispose as required by existing regulations.

C. Remove and Salvage: Detach items from existing construction, in a manner to prevent damage, and deliver to Owner ready for reuse. Include fasteners or brackets needed for reattachment elsewhere. Contractor to coordinate with the Owner on items to be salvaged prior to demolition.

1.4 MATERIALS OWNERSHIP

A. Contractor to coordinate with the Owner on items to be salvaged prior to demolition. Unless otherwise indicated, demolition waste becomes property of Contractor.

B. Historic items, relics, antiques, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, and other items of interest or value to Owner that may be uncovered during demolition remain the property of Owner.

1. Carefully salvage in a manner to prevent damage and promptly return to Owner.

1.5 COORDINATION

A. Arrange demolition schedule so as not to interfere with Owner's on-site operations and operations of adjacent occupied buildings.

1.6 PREINSTALLATION MEETINGS

A. Predemolition Conference: Conduct conference at Project sites (Seminole and Bayview Lift Stations).

1. Inspect and discuss condition of construction to be demolished.
2. Review hazardous material information and finalize removal procedures as required. Review structural load limitations of existing structures.
3. Review and finalize building demolition schedule and verify availability of demolition personnel, equipment, and facilities needed to make progress and avoid delays.
4. Review and finalize protection requirements.
5. Review procedures for noise control and dust control.
6. Review procedures for protection of adjacent buildings.
7. Review items to be salvaged and returned to Owner.
8. Review bypass operations during construction.

1.7 INFORMATIONAL SUBMITTALS

A. Engineering Survey: Submit engineering survey of condition of building including hazardous materials information.

B. Proposed Protection Measures: Submit report, including Drawings, that indicates the measures proposed for protecting individuals and property, for environmental protection, for dust control and, for noise control. Indicate proposed locations and construction of barriers.

1. Adjacent Buildings: Detail special measures proposed to protect adjacent buildings to remain including means of egress from those buildings.

C. Schedule of Building Demolition Activities: Indicate the following:

1. Detailed sequence of demolition work, with starting and ending dates for each activity.
2. Temporary interruption of utility services.
3. Shutoff and capping and re-routing of utility services.

D. Predemolition Photographs or Video: Show existing conditions of adjoining construction and site improvements, including finish surfaces, that might be misconstrued as damage caused by salvage and demolition operations.

1.8 CLOSEOUT SUBMITTALS

A. Inventory: Submit a list of items that have been removed and salvaged.

1.9 FIELD CONDITIONS

A. Buildings to be demolished will be vacated and their use discontinued before start of the Work.

B. Buildings immediately adjacent to demolition area will be occupied. Conduct building demolition so operations of occupied buildings will not be disrupted.

1. Provide not less than 72 hours' notice of activities that will affect operations of adjacent occupied buildings.
2. Maintain access to existing walkways, exits, and other facilities used by occupants of adjacent buildings.

a. Do not close or obstruct walkways, exits, or other facilities used by occupants of adjacent buildings without written permission from authorities having jurisdiction.

C. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.

1. Before building demolition, Contractor to coordinate with the Owner on items to be salvaged prior to demolition

D. Hazardous Materials: All activities, handling and disposal of hazardous environmental conditions and materials shall be in accordance with OSHA, Federal, State, and local regulations.

1. If materials suspected of containing hazardous materials are encountered, do not disturb; immediately notify Engineer and Owner.

E. On-site storage or sale of removed items or materials is not permitted.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.

B. Standards: Comply with ANSI/ASSE A10.6 and NFPA 241.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that utilities have been disconnected and capped before starting demolition operations.

B. Review Project Record Documents of existing construction or other existing condition and hazardous material information provided by Owner. Owner does not guarantee that existing conditions are same as those indicated in Project Record Documents.

C. Engage professional engineer to perform an engineering survey of condition of building to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of structure or adjacent structures during building demolition operations.

D. Steel Tendons: Locate tensioned steel tendons and include recommendations for de-tensioning.

A. Verify that hazardous materials have been remediated before proceeding with building demolition operations. Existing wet wells of both lift stations must be vacuumed and cleaned by the Contractor prior to demolition.

B.

C. Inventory and record the condition of items to be removed and salvaged.

3.2 PREPARATION

A. Salvaged Items: Comply with the following:

1. Clean salvaged items of dirt and demolition debris.
2. Pack or crate items after cleaning. Identify contents of containers.
3. Store items in secure area until delivery to Owner.
4. Transport items to storage area designated by Owner.
5. Protect items from damage during transport and storage.

3.3 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

A. Existing Utilities to be Disconnected: Locate, identify, disconnect, and seal or cap off utilities serving buildings and structures to be demolished.

1. Arrange to shut off utilities with utility companies.
2. If removal, relocation, or abandonment of utility services will affect adjacent occupied buildings, then provide temporary utilities that bypass buildings and structures to be demolished and that maintain continuity of service to other buildings and structures.
3. Cut off pipe or conduit a minimum of 24 inches (610 mm) below grade. Cap, valve, or plug and seal remaining portion of pipe or conduit after bypassing according to requirements of authorities having jurisdiction.
4. Do not start demolition work until utility disconnecting and sealing have been completed and verified in writing.

3.4 PROTECTION

A. Existing Facilities: Protect adjacent walkways, loading docks, building entries, and other building facilities during demolition operations. Maintain exits from existing buildings.

B. Temporary Shoring: Provide and maintain interior and exterior shoring, bracing, or structural support to preserve stability and prevent unexpected movement or collapse of construction being demolished.

1. Strengthen or add new supports when required during progress of demolition.

C. Existing Utilities to Remain: Maintain utility services to remain and protect from damage during demolition operations.

1. Do not interrupt existing utilities serving adjacent occupied or operating facilities unless authorized in writing by Owner and authorities having jurisdiction.
2. Provide temporary services during interruptions to existing utilities, as acceptable to Owner and authorities having jurisdiction.

a. Provide at least 72 hours' notice to occupants of affected buildings if shutdown of service is required during changeover.

D. Temporary Protection: Erect temporary protection, such as walks, fences, railings, canopies, and covered passageways, where required by authorities having jurisdiction and as indicated.

1. Protect adjacent buildings and facilities from damage due to demolition activities.
2. Protect existing site improvements, appurtenances, and landscaping to remain.
3. Erect a plainly visible fence around drip line of individual trees or around perimeter drip line of groups of trees to remain.
4. Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
5. Provide protection to ensure safe passage of people around building demolition area and to and from occupied portions of adjacent buildings and structures.
6. Protect walls, windows, roofs, and other adjacent exterior construction that are to remain and that are exposed to building demolition operations.
7. Erect and maintain dustproof partitions and temporary enclosures to limit dust, noise, and dirt migration to occupied portions of adjacent buildings.

E. Remove temporary barriers and protections where hazards no longer exist. Where open excavations or other hazardous conditions remain, leave temporary barriers and protections in place.

3.5 DEMOLITION, GENERAL

A. General: Demolish indicated buildings and site improvements completely. Use methods required to complete the Work within limitations of governing regulations and as follows:

1. Do not use cutting torches until work area is cleared of flammable materials. Maintain portable fire-suppression devices during flame-cutting operations.
2. Maintain fire watch during and for at least <**1**> hours after flame-cutting operations.
3. Maintain adequate ventilation when using cutting torches.
4. Locate building demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.

B. Site Access and Temporary Controls: Conduct building demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

1. Do not close or obstruct streets, walks, walkways, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction. Provide alternate routes around closed or obstructed trafficways if required by authorities having jurisdiction.
2. Use water mist and other suitable methods to limit spread of dust and dirt. Comply with governing environmental-protection regulations. Do not use water when it may damage adjacent construction or create hazardous or objectionable conditions, such as ice, flooding, and pollution.

C. Explosives: Use of explosives is not permitted.

3.6 DEMOLITION BY EXPLOSIVES

A. Explosives: Explosive demolition is not permitted unless approved by Owner.

3.7 DEMOLITION BY MECHANICAL MEANS

A. Proceed with demolition of structural framing members systematically, from higher to lower level. Complete building demolition operations above each floor or tier before disturbing supporting members on the next lower level.

B. Remove debris from elevated portions of the building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.

1. Remove structural framing members and lower to ground by method suitable to minimize ground impact and dust generation.

C. Salvage: Items to be removed and salvaged are indicated by Owner. Contractor to coordinate with the Owner on items to be salvaged prior to demolition.

D. Below-Grade Construction: Abandon foundation walls and other below-grade construction. Cut below-grade construction flush with grade.

E. Below-Grade Construction: Demolish foundation walls and other below-grade construction that are within footprint of new construction and extending 5 feet (1.5 m) outside footprint indicated for new construction. Abandon below-grade construction outside this area.

1. Remove below-grade construction, including basements, foundation walls, and footings, to at least 12 inches (300 mm) below grade.

F. Below-Grade Construction: Demolish foundation walls and other below-grade construction.

1. Remove below-grade construction, including basements, foundation walls, and footings, to at least 12 inches (300 mm) below grade.

G. Existing Utilities: Abandon existing utilities and below-grade utility structures as indicated on the drawings.

H. Existing Utilities: Demolish existing utilities and below-grade utility structures that are within 5 feet (1.5 m) outside footprint indicated for new construction. Abandon utilities outside this area as indicated on the drawings.

1. Fill abandoned utility structures with flowable fill.

I. Hydraulic Elevator Systems: Demolish and remove elevator system, including cylinder, plunger, well assembly, steel well casing and liner, oil supply lines, and tanks.

3.8 SITE RESTORATION

A. Below-Grade Areas: Rough grade below-grade areas ready for further excavation or new construction.

B. Below-Grade Areas: Completely fill below-grade areas and voids resulting from building demolition operations with flowable fill according to backfill requirements in Section 312000 "Earthwork."

C. Site Grading: Uniformly rough grade area of demolished construction to a smooth surface, free from irregular surface changes. Provide smooth transition between adjacent existing grades and new grades.

3.9 REPAIRS

A. Promptly repair damage to adjacent buildings caused by demolition operations.

3.10 DISPOSAL OF DEMOLISHED MATERIALS

A. Remove demolition waste materials from Project site and dispose of them in an EPA-approved construction and demolition waste landfill acceptable to authorities having jurisdiction and recycle or dispose of them.

1. Do not allow demolished materials to accumulate on-site.
2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

B. Do not burn demolished materials.

3.11 CLEANING

A. Clean adjacent structures and improvements of dust, dirt, and debris caused by building demolition operations. Return adjacent areas to condition existing before building demolition operations began.

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1. Clean roadways of debris caused by debris transport.

END OF SECTION 024116

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SECTION 033010 – MISCELLANEOUS CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes:

1. Cast-in-place concrete, including formwork, reinforcement, concrete materials, mixture design, placement procedures, and finishes.
2. Delegated Design.

B. Related Requirements:

1. Section 036000 “Grouting” for grouting.
2. Section 050519 “Post-Installed Anchors” for post installed adhesive anchoring system.

1.3 DEFINITIONS

A. Cementitious Materials: Portland cement alone or in combination with fly ash or ground granulated blast furnace slag; materials subject to compliance with requirements.

B. W/C Ratio: The ratio by weight of water to cementitious materials.

1.4 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1. Before submitting design mixtures, review concrete design mixture and examine procedures for ensuring quality of concrete materials. Require representatives of each entity directly concerned with cast-in-place concrete to attend, including the following:

a. Contractor's superintendent.
b. Independent testing agency responsible for concrete design mixtures.
c. Ready-mix concrete manufacturer.
d. Concrete Subcontractor.

2. Review steel reinforcement installation; anchor rod and anchorage device installation tolerances; construction, joints; forms and form removal limitations; cold- and hot-weather concreting procedures; curing procedures; concrete finishes and finishing;

special inspection and testing, and Contractor's inspecting agency procedures for field quality control; and concrete protection.

1.5 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Concrete Design Mixtures: Design Mixtures: For each formulation of concrete proposed for use, submit constituent quantities per cubic yard (cubic meter), water cementitious ratio, air content, concrete slump, type and manufacturer of cement and type and manufacturer of fly ash or ground granulated blast furnace slag. Provide either:

1. Standard deviation data for each proposed concrete mix based on statistical records.
2. Water cementitious ratio curve for concrete mixes based on laboratory tests.

C. Steel Reinforcement Shop Drawings: Placing Drawings that detail fabrication, bending, and placement. Include bar sizes, spacing, lengths, material, grade, bar schedules, bent bar diagrams, bar arrangement, splices and laps, mechanical connections, tie spacing, and supports for concrete reinforcement. Reference bars to be the same identification marks shown on bar bending details.

D. Material Certificates: For each of the following:

1. Cementitious materials.
2. Admixtures.
3. Form materials and form-release agents.
4. Steel reinforcement and accessories.
5. Curing compounds.

E. Material Test Reports: For the following, from qualified testing agency:

1. Aggregates: Conformance to ASTM standards, including sieve analysis, mechanical properties, and deleterious substance content.
2. Mill Test Reports: Conformance to ASTM standards, including chemical analysis and physical tests.

    a. Cementitious materials.
    b. Steel Reinforcing.

1.6 DELEGATED DESIGN SUBMITTALS

A. Shop Drawings:

1. Indicate:

    a. Formwork, shoring and reshoring.

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1.7 INFORMATIONAL SUBMITTALS

A. Qualification Data: For independent testing agency responsible for concrete design mixtures.

B. Certifications:

1. Certify that admixtures used in the same concrete mix are compatible with each other and the aggregates.
2. Certificate of conformance for concrete production facilities from the NRMCA.

C. Field quality-control reports.

D. Minutes of preinstallation conference.

E. Submit signed and sealed Shop Drawings with design calculations and assumptions for formwork, shoring, and reshores by a Professional Engineer registered in the State of Florida.

1.8 QUALITY ASSURANCE

A. Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C94/C94M requirements for production facilities and equipment.

1. Manufacturer certified according to NRMCA's "Certification of Ready Mixed Concrete Production Facilities."

B. Testing Agency Qualifications: An independent agency, acceptable to authorities having jurisdiction, qualified according to ASTM C1077 and ASTM E329 for testing indicated.

1. Personnel conducting field tests shall be qualified as ACI Concrete Field-Testing Technician, Grade 1, according to ACI CP-1 or an equivalent certification program.
2. Personnel performing laboratory tests shall be ACI-certified Concrete Strength Testing Technician and Concrete Laboratory Testing Technician, Grade I. Testing agency laboratory supervisor shall be an ACI-certified Concrete Laboratory Testing Technician, Grade II.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Steel Reinforcement: Provide reinforcement free from mill scale, rust, mud, dirt, grease, oil, ice, or other foreign matter that will reduce or destroy bond. Deliver, store, and handle steel reinforcement to prevent bending and damage. Store reinforcement off the ground, protect from moisture, and keep out of standing water, and free from rust, mud, dirt, grease, oil, ice, or other contaminants and deleterious matter that will reduce or destroy bond.

B. Inspection: Accept materials on Site in manufacturer's original packaging and inspect for damage.

C. Store materials according to manufacturer instructions. Limit total storage time from date of manufacture to date of installation to six months or the manufacturer's recommended storage time, whichever is less.

D. Remove immediately from the site material which becomes damp, contains lumps, or is hardened and replace with acceptable material.

E. Protection:

1. Protect materials from moisture and dust by storing in clean, dry location.
2. Provide additional protection according to manufacturer instructions.

1.10 FIELD CONDITIONS

A. Hot-Weather Placement: Comply with ACI 301 and ACI 305.1, and as follows:

1. Maintain concrete temperature below 90 degrees F at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated to total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.
2. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade uniformly moist without standing water, soft spots, or dry areas.

PART 2 - PRODUCTS

2.1 CONCRETE, GENERAL

A. ACI Publications: Comply with the following unless modified by requirements in the Contract Documents:

1. ACI 301.
2. ACI 117.

2.2 FORM-FACING MATERIALS

A. Delegated Design Structural Design Responsibility: Provide forms, shoring, and reshoring designed by a professional engineer registered in the State of Florida. Design formwork in accordance with the requirements of ACI 301, ACI 318 and ACI 347. Comply with all applicable regulations and codes. Consider any special requirements due to the use of plasticized and/or retarded set concrete.

B. Form-facing panels that provide continuous, true, and smooth concrete surfaces. Furnish in largest practicable sizes to minimize number of joints.

1. Plywood, metal, or other approved panel materials.

C. Chamfer Strips: Wood, metal, PVC, or rubber strips, 3/4 by 3/4-inch, minimum.

D. Form-Release Agent: Commercially formulated form-release agent that does not bond with, stain, or adversely affect concrete surfaces and does not impair subsequent treatments of concrete surfaces. Form-release agent to comply with Federal, State and local VOC limitations.

1. Formulate form-release agent with rust inhibitor for steel form-facing materials.

E. Form Ties: Factory-fabricated, removable or snap-off glass-fiber-reinforced plastic or metal form ties designed to resist lateral pressure of fresh concrete, heavy high frequency vibration of the concrete on forms and to prevent spalling of concrete on removal.

1. Furnish units that leave no corrodible metal closer than 1-inch to the plane of exposed concrete surface.
2. Furnish ties that, when removed, leave holes no larger than 1-inch in diameter in concrete surface.
3. Furnish ties with integral water-barrier plates to retaining walls.

2.3 STEEL REINFORCEMENT

A. Reinforcing Bars: ASTM A615/A615M, Grade 60, new deformed bars.

2.4 REINFORCEMENT ACCESSORIES

A. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded-wire reinforcement in place. Manufacture bar supports from steel wire, plastic, or precast concrete of greater compressive strength than the specified concrete strength, according to CRSI's "Manual of Standard Practice," and as follows:

1. For concrete surfaces exposed to view, where legs of wire bar support contact forms, use CRSI Class 1 plastic-protected steel wire or CRSI Class 2 stainless steel bar supports.

B. Tie wires for reinforcement: 16 gauge or heavier black annealed wire to tie uncoated reinforcing.

2.5 CONCRETE MATERIALS

A. Source Limitations: Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant, obtain aggregate from single source, and obtain admixtures from single source from single manufacturer.

B. Cementitious Materials:

1. Domestic Portland Cement: ASTM C150/C150M, Type II.
2. Domestic Blended Cement: ASTM C595, Type IL (MS).
3. Fly Ash: ASTM C618, Class F.
4. Ground Granulated Blast Furnace Slag: ASTM C989/C989M, Grade 100 or 120.

C. Normal-Weight Aggregates: ASTM C33/C33M, Class 3S coarse aggregate or better, graded. Provide aggregates from a single source.

1. Maximum Coarse-Aggregate Size: As indicated by concrete mixtures specified herein.
2. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.

D. Air-Entraining Admixture: ASTM C260/C260M.

E. Chemical Admixtures: Certified by manufacturer to be compatible with other admixtures and that do not contribute water-soluble chloride ions exceeding those permitted in hardened concrete. Do not use calcium chloride or admixtures containing calcium chloride.

1. Water-Reducing Admixture: ASTM C494/C494M, Type A.
2. High-Range, Water-Reducing Admixture: ASTM C494/C494M, Type F.

F. Water: ASTM C94/C94M and potable.

2.6 CURING MATERIALS

A. Absorptive Cover: AASHTO M182, Class 2, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. when dry.

B. Moisture-Retaining Cover: ASTM C171, polyethylene film or white burlap-polyethylene sheet.

C. Water: Potable.

D. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C309, Type 1-D, Class B, dissipating.

2.7 CONCRETE MIXTURES, GENERAL

A. Prepare design mixtures for each type and strength of concrete, proportioned on the basis of laboratory trial mixture or field test data, or both, according to ACI 301.

1. Use qualified independent testing agency for preparing and reporting proposed mixture designs based on laboratory trial mixtures.

B. Cementitious Materials: limit percentage, by weight, of cementitious materials (Portland cement alone or in combination with fly ash or Ground Granulated Blast Furnace Slag) in concrete as follows:

1. Fly Ash: 20-25 percent.
2. Ground Granulated Blast Furnace Slag: 25-45 percent.

C. Admixtures: Use admixtures according to manufacturer's written instructions.

1. Use water-reducing admixture in concrete, for placement and workability.
2. High-range water-reducing admixture in concrete, may be used, for placement and workability.

2.8 CONCRETE MIXTURES

A. Structural Concrete.

1. Minimum Compressive Strength: 5000 psi at 28 days.
2. Maximum W/C Ratio: 0.42.
3. Slump Limit: 4 inches, 8 inches for concrete with verified slump of 2 to 4 inches before adding high-range water-reducing admixture or plasticizing admixture, plus or minus 1-inch.
4. Air Content: Not required.
5. Coarse Aggregate: ASTM C33, size 57.

2.9 FABRICATING REINFORCEMENT

A. Fabricate steel reinforcement according to CRSI's "Manual of Standard Practice."

2.10 CONCRETE MIXING

A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C94/C94M, and furnish batch ticket information.

1. When air temperature is between 85 and 90 degrees F, reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 degrees F, reduce mixing and delivery time to 60 minutes.

PART 3 - EXECUTION

3.1 FORMWORK INSTALLATION

A. Erect, brace, and maintain formwork, according to ACI 301, to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until structure can support such loads.

B. Construct formwork so concrete members and structures are of size, shape, alignment, elevation, and position indicated, within tolerance limits of ACI 117.

C. Use form-facing materials as required to meet the surface finishes (SF) requirements of ACI 301, unless otherwise specified provide as-cast form finishes per ACI 301 as follows:

1. Surface Finish (SF-2.0).

D. Construct forms tight to prevent loss of concrete mortar.

E. Construct forms for easy removal without hammering or prying against concrete surfaces. Provide crush or wrecking plates where stripping may damage cast-concrete surfaces. Provide top forms for inclined surfaces steeper than 1.5 horizontal to 1 vertical.

1. Install recesses, and the like, for easy removal.
2. Do not use rust-stained steel form-facing material.

F. Set edge forms, bulkheads, and intermediate screed strips for slabs to achieve required elevations and slopes in finished concrete surfaces. Provide and secure units to support screed strips; use strike-off templates or compacting-type screeds.

G. Provide temporary openings for cleanouts and inspection ports where necessary. Close openings with panels tightly fitted to forms and securely braced to prevent loss of concrete mortar. Locate temporary openings in forms at inconspicuous locations.

H. Chamfer exterior corners and edges of permanently exposed concrete.

I. Form openings, chases, offsets, sinkages, blocking, screeds, and bulkheads required in the Work. Determine sizes and locations from trades providing such items.

J. Clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, ice, snow and other debris just before placing concrete.

K. Retighten forms and bracing before placing concrete, as required, to prevent mortar leaks and maintain proper alignment.

L. Coat contact surfaces of forms with form-release agent, according to manufacturer's written instructions, before placing reinforcement.

3.2 EMBEDDED ITEM INSTALLATION

A. Place and secure anchorage devices and other embedded items required for adjoining work that is attached to or supported by cast-in-place concrete. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.

1. Install anchor rods, accurately located, to elevations required and complying with tolerances in Section 7.5 of AISC 303.

3.3 REMOVING AND REUSING FORMS

A. General: Formwork for parts of the Work that does not support weight of concrete may be removed after cumulatively curing at not less than 50 degrees F for 24 hours after placing concrete. Concrete has to be hard enough to not be damaged by form-removal operations, and curing and protection operations must be maintained.

1. Leave formwork for structural elements that support weight of concrete in place until concrete has achieved at least 70 percent of its 28-day design compressive strength.

B. Clean and repair surfaces of forms to be reused in the Work. Split, frayed, delaminated, or otherwise damaged form-facing materials are not acceptable for exposed surfaces. Re-apply new form-release agent.

C. When forms are reused, clean surfaces, remove fins and laitance, and tighten to close joints. Align and secure joints to avoid offsets. Do not use patched forms for exposed concrete surfaces unless approved by Engineer.

3.4 STEEL REINFORCEMENT INSTALLATION

A. General: Comply with CRSI's "Manual of Standard Practice" for fabricating, placing, and supporting reinforcement.

B. Clean reinforcement of loose mill scale, rust, mud, dirt, grease, oil, ice, and other foreign materials that reduce or destroy the bond to concrete.

C. Accurately position, support, and secure reinforcement against displacement. Locate and support reinforcement with bar supports to maintain minimum clear concrete cover. Do not tack weld crossing reinforcing bars.

D. Set wire ties with ends directed into concrete, not toward exposed concrete surfaces.

E. Splicing:

1. If not indicated on Drawings, locate reinforcement splices at point of minimum stress.

3.5 JOINTS

A. General: Construct joints true to line with faces perpendicular to surface plane of concrete.

B. Construction Joints: Install so strength and appearance of concrete are not impaired, at locations indicated or as approved by Engineer.

1. Place joints perpendicular to main reinforcement. Continue reinforcement across construction joints unless otherwise indicated.
2. Locate joints for foundations in the middle third of spans.
3. Locate horizontal joints in walls and at the top of footings.
4. Space vertical joints in walls as indicated on the Drawings.
5. At construction joints and at concrete joints indicated on Drawings to be "roughened", uniformly roughen the surface of concrete to a full amplitude (distance between high and low points and side to side) of 1/4 inch with chipping tools to expose a fresh face. Thoroughly clean joint surfaces of loose or weakened materials by waterblasting or sandblasting and prepare for bonding. At least two hours before and again shortly before the new concrete is deposited, saturate joints with water. After glistening water disappears, coat joints with neat cement slurry mixed to consistency of very heavy paste. Coat surfaces to a depth of at least 1/8 inch thick, scrubbed-in by means of stiff bristle brushes. Deposit new concrete before the neat cement dries.
6. Do not use keyways in construction joints unless specifically shown on Drawings or approved by Engineer.

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3.6 CONCRETE PLACEMENT

A. Before placing concrete, verify that installation of formwork, reinforcement, and embedded items is complete and that required inspections are completed.

B. Do not add water to concrete during delivery, at Project site, or during placement unless approved by Engineer.

1. Do not add water to concrete after adding high-range water-reducing admixtures to mixture.

C. Deposit concrete continuously in one layer or in horizontal layers of such thickness that no new concrete is placed on concrete that has hardened enough to cause seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as indicated. Deposit concrete to avoid segregation.

1. Deposit concrete in horizontal layers of depth not to exceed formwork design pressures and in a manner to avoid “cold” joints.
2. Consolidate placed concrete with mechanical vibrating equipment according to ACI 301.
3. Do not use vibrators to transport concrete inside forms. Insert and withdraw vibrators vertically at uniformly spaced locations to rapidly penetrate placed layer and at least 6 inches into preceding layer. Do not insert vibrators into lower layers of concrete that have begun to lose plasticity. At each insertion, limit duration of vibration to time necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without causing mixture constituents to segregate.
4. Consolidate concrete during placement operations, so concrete is thoroughly worked around reinforcement and other embedded items and into corners.

D. Slabs and equipment foundations:

1. Maintain reinforcement in position on chairs during concrete placement.
2. Screed surfaces with a straightedge and strike off to correct elevations.
3. Slope surfaces uniformly to drains where required.
4. Begin initial floating using bull floats or darbies to form a uniform and open-textured surface plane, before excess bleedwater appears on the surface. Do not further disturb slab surfaces before starting finishing operations.

3.7 FINISHING SURFACES

A. Finish concrete surfaces according to ACI 301 and ACI 318.

B. Surface Finish 2.0: As-cast concrete texture imparted by form-facing material, arranged in an orderly and symmetrical manner with a minimum of seams. Repair and patch tie holes and defects. Remove fins and other projections that exceed specified limits on formed-surface irregularities.

1. Apply to concrete surfaces exposed to view, to receive a rubbed finish.

C. Rubbed Finish: Apply a Smooth-Rubbed Finish per ACI 301 to exposed Surface Finish 2.0 as-cast vertical concrete surfaces as specified.

D. Float Finish: Apply float finish per ACI 301 prior to broom finish or trowel finish.

E. Broom Finish: After concrete has received a float finish, apply to smooth-formed-finished as-cast concrete surfaces subject to pedestrian traffic. Provide broom finish perpendicular to direction of pedestrian traffic.

F. Related Unformed Surfaces: At tops of walls, horizontal offsets, and similar unformed surfaces adjacent to formed surfaces, strike off smooth and finish with a texture matching adjacent formed surfaces. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces unless otherwise indicated.

3.8 MISCELLANEOUS CONCRETE ITEM INSTALLATION

A. Filling In: Fill in holes and openings left in concrete structures after work of other trades is in place unless otherwise indicated. Mix, place, and cure concrete, as specified, to blend with in-place construction. Provide other miscellaneous concrete filling indicated or required to complete the Work.

3.9 CONCRETE PROTECTION AND CURING

A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and ACI 305.1 for hot-weather protection during curing.

B. Formed Surfaces: Cure formed concrete surfaces. If forms remain during curing period, moist cure after loosening forms. If removing forms before end of curing period, continue curing for remainder of curing period.

C. Unformed Surfaces: Begin curing immediately after finishing concrete. Cure unformed surfaces, including floors and slabs, concrete floor toppings, and other surfaces.

D. Cure concrete according to ACI 308.1, by one or combination of the following methods:

1. Moisture Curing: Keep surfaces continuously moist for not less than seven days with the following materials:

    a. Water.
    b. Continuous water-fog spray.
    c. Absorptive cover, water saturated, and kept continuously wet. Cover concrete surfaces and edges with 12-inch lap over adjacent absorptive covers.

2. Curing Compound: Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating and repair damage during curing period.

a. Removal: After curing period has elapsed, remove curing compound without damaging concrete surfaces by method recommended by curing compound manufacturer.

3.10 CONCRETE SURFACE REPAIRS

A. Defective Concrete: Repair and patch defective areas when approved by Engineer. Remove and replace concrete that cannot be repaired and patched to Engineer's approval.

B. Patching Mortar: Mix dry-pack patching mortar, consisting of 1 part Portland cement to 2-1/2 parts fine aggregate passing a No. 16 sieve, using only enough water for handling and placing.

C. Repair surfaces containing defects. Surface defects include color and texture irregularities, voids, cracks, spalls, air bubbles, bug holes, honeycombs, rock pockets, fins and other projections on the surface, and stains and other discolorations that cannot be removed by cleaning.

D. Limit sawcut at the perimeter of the area to a depth of 3/4-inch. Make edges of cuts perpendicular to concrete surface. Prepare surfaces per patching mortar manufacturer’s recommendations.

E. Repairing Formed Surfaces:

1. Immediately after form removal, cut out honeycombs, rock pockets, and voids more than 1/2-inch in any dimension to solid concrete. Fill and compact with patching mortar before bonding agent has dried. Fill form-tie voids with patching mortar or cone plugs secured in place with bonding agent.
2. Repair defects using patching mortar. On surfaces exposed to view repair by blending white Portland cement and standard Portland cement so that, when dry, patching mortar matches surrounding color. Patch a test area at inconspicuous locations to verify mixture and color match before proceeding with patching. Compact mortar in place and strike off slightly higher than surrounding surface.
3. Repair defects on concealed formed surfaces that affect concrete's durability and structural performance as determined by Engineer.

F. Repairing Unformed Surfaces:

1. Inspect unformed surfaces, such as tops of foundations or equipment pads, for finish and verify surface tolerances specified for each surface.
2. After concrete has cured at least 14 days, correct high areas by grinding.
3. Correct localized low areas during or immediately after completing surface finishing operations by cutting out low areas and replacing with patching mortar. Limit sawcut at the perimeter of the area to a depth of 3/4-inch. Finish repaired areas to blend into adjacent concrete.
4. Repair defective areas, by cutting out and replacing with fresh concrete. Remove defective areas with clean, square cuts and expose steel reinforcement with at least a 3/4-inch clearance all around. Mix patching mortar per manufacturer’s recommendations, including coarse aggregate when required. Place, compact, and finish to blend with adjacent finished concrete. Cure in same manner as adjacent concrete.

5. Correct crazing and cracks in excess of 0.01-inch wide or that penetrate to reinforcement or completely through unreinforced sections regardless of width, and other objectionable conditions.

G. Perform structural repairs of concrete, subject to Engineer's approval, using epoxy adhesive and patching mortar.

H. Repair materials and installation not specified above may be used, subject to Engineer's approval.

3.11 FIELD QUALITY CONTROL

A. Contractor will engage qualified testing and inspection agency to perform field tests and inspections and prepare test reports.

B. Notify the Owner when the reinforcing is complete and ready for inspection, at least six working hours prior to the proposed concrete placement. Do not cover reinforcing steel with concrete until the installation of the reinforcement, including the size, spacing and position of the reinforcement has been inspected by the Contractor’s inspection agency and the inspection agency release to proceed with the concreting has been obtained. Keep forms open until the Owner’s inspection agency has completed inspection of the reinforcement.

C. Concrete Tests: Testing of composite samples of fresh concrete obtained according to ASTM C172/C172M shall be performed according to the following requirements by the Owner’s testing agency:

1. Testing Frequency: One composite sample for each 100 cu. yd. or fraction thereof of each concrete mixture placed each day.

    a. When frequency of testing provides fewer than five compressive-strength tests for each concrete mixture, testing shall be conducted from at least five randomly selected batches or from each batch if fewer than five are used.

2. Slump: ASTM C143/C143M; one test at point of discharge for each composite sample, but not less than one test for each day's placement of each concrete mixture. Additional tests will be performed when concrete consistency appears to change.
3. Air Content: ASTM C231/C231M, pressure method, for concrete; one test for each composite sample at the point of placement, but not less than one test for each day's placement of each concrete mixture.
4. Concrete Temperature: ASTM C1064/C1064M; one test hourly when air temperature is 40 degrees F and below or 80 degrees F and above, and one test for each composite sample.
5. Compression Test Specimens: ASTM C31/C31M.

    a. Cast and cure one set of five 4-inch by 8-inch-long standard cylinder specimens for each composite sample.

6. Compressive-Strength Tests: ASTM C39/C39M; test two specimens at 7 days, test two specimens at 28 days. The fifth may be used to verify strength after 28 days if the 28-day test results are low.

7. Strength of each concrete mixture will be satisfactory if every average of any three-consecutive compressive-strength tests equals or exceeds specified compressive strength and no compressive-strength test value falls below specified compressive strength by more than 500 psi.
8. Test results shall be reported in writing to Engineer, concrete manufacturer, and Contractor within 48 hours of testing. Reports of compressive-strength tests shall contain Project identification name and number, date of concrete placement, name of concrete testing and inspecting agency, location of concrete batch in Work, design compressive strength at 28 days, concrete mixture proportions and materials, compressive breaking strength, and type of break.
9. Additional Tests: Testing and inspecting agency shall make additional tests of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by Engineer. Testing and inspecting agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C42/C42M or by other methods as directed by Engineer.
10. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.
11. Correct deficiencies in the Work that test reports and inspections indicate do not comply with the Contract Documents.

END OF SECTION 033010

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SECTION 036000 - GROUTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Non-shrink cementitious grout.
2. Concrete grout.

B. Related Requirements:

1. Section 033010 “Miscellaneous Cast-in-Place Concrete.”
2. Section 055000 “Metal Fabrications” for grout related to miscellaneous metals.

1.3 ACTION SUBMITTALS

A. Product Data: Submit manufacturer information regarding grout and surface preparation, mixing and installation.

1. Commercially manufactured nonshrink cementitious grout. Include catalog cuts, technical data, storage requirements, product life, working time after mixing, temperature considerations, and conformity to the specified ASTM standards.
2. Concrete grout. Include data as required for concrete and for fiber reinforcement as delineated.

1.4 INFORMATIONAL SUBMITTALS

A. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

B. Manufacturer Instructions: Submit instructions for mixing, handling, surface preparation, and placing epoxy-type and nonshrink grouts.

C. Field Quality-Control Submittals: Indicate results of Contractor-furnished tests and inspections.

D. Qualifications Statement:

1. Submit qualifications for manufacturer.

1.5 QUALITY ASSURANCE

A. Manufacturer: Company specializing in manufacturing products specified in this Section with minimum ten years' experience in production and use of provided grouts.

B. Independent testing laboratory shall meet the requirements of ASTM E329 and ASTM C1077 and be acceptable to the Engineer. Laboratories affiliated with the Contractor or in which the Contractor or officers of the Contractor's organization have beneficial interest are not acceptable.

C. Field testing of concrete grout will be as specified for concrete in Section 033010 “Miscellaneous Cast-In-Place Concrete.”

1.6 DELIVERY, STORAGE, AND HANDLING

A. Inspection: Accept materials on Site in manufacturer's original packaging and inspect for damage.

B. Store materials according to manufacturer instructions. Limit total storage time from date of manufacture to date of installation to six months or the manufacturer’s recommended storage time, whichever is less.

C. Remove immediately from the site material which becomes damp, contains lumps, or is hardened and replace with acceptable material.

D. Protection:

1. Protect materials from moisture and dust by storing in clean, dry location.
2. Provide additional protection according to manufacturer instructions.

1.7 AMBIENT CONDITIONS

A. Maximum Conditions: Do not perform grouting if temperatures exceed 90 degrees F.

B. Minimum Conditions: Do not perform grouting if the minimum temperature of base plates, supporting concrete and grout are less than 40 degrees F. Maintain minimum temperature of 40 degrees F before, during, and after grouting, until grout has set.

PART 2 - PRODUCTS

2.1 NONSHRINK CEMENTITIOUS GROUT

A. Products:

1. SikaGrout 212 by Sika Corp.
2. NS Grout by Euclid Chemical Co.

3. Five Star Grout by Five Star Products, Inc.
4. Or approved equal.

B. Description:

1. Pre-mixed and ready-for-use formulation requiring only addition of water.
2. Nonshrink, non-corrosive, nonmetallic, non-gas forming, not containing expansive cement and no chlorides.
3. No shrinkage when tested in conformity with ASTM C827/C827M.

C. Performance and Design Criteria:

1. Certified to maintain initial placement volume or expand after set, and to meet following minimum properties when tested according to ASTM C1107/C1107M for Grades B, C, D and CRD-C621 nonshrink grout:

a. Setting Time:

1) Initial: Approximately two hours.
2) Final: Approximately three hours.
3) Comply with ASTM C191.

b. Maximum Expansion: 0.10 to 0.40 percent.
c. Minimum Compressive Strength:

1) One-Day: 4,000 psi.
2) Seven-Day: 7,000 psi.
3) 28-Day: 10,000 to 10,800 psi.
4) Comply with CRD-C621.

2.2 CONCRETE GROUT

A. Description: Conform to the requirements of Section 033000 “Cast-In-Place Concrete”, except as follows. Proportion with Type II cement, coarse and fine aggregates, water, water reducing admixture, and air entraining agent to produce specified mix performance:

1. Average Strength (ASTM C579): 3500 psi at 28 days (2500 psi nominal strength).
2. Maximum Coarse Aggregate Size: 3/8-inch.
3. Minimum Cement Content: 540 lbs per cubic yard.
4. Maximum Water to Cement Ratio: 0.45.
5. Maximum Slump: 5 inches.

B. Add synthetic reinforcing fibers to the concrete grout mix at the rate of 1.5 lbs of fibers per cubic yard of grout. Add fibers from manufacturer's pre-measured bags and according to manufacturer's recommendations to ensure complete dispersion of fiber bundles as single monofilaments within the concrete grout. Synthetic reinforcing fibers for concrete grout shall be 100 percent polypropylene collated, fibrillated fibers, Fibermesh 300 as manufactured by Sika Fibers LLC, Chattanooga, TN. Fiber length and quantity for the concrete grout mix shall be in strict compliance with the manufacturer's recommendations as approved by Engineer.

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PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify areas to receive grout.

3.2 PREPARATION

A. Place grout where indicated or specified over cured concrete which has attained its specified design strength unless otherwise approved by Engineer.

B. Remove defective concrete, ice, laitance, dirt, oil, grease, form release agents, paints, and other foreign material from concrete surfaces, which may affect the bond or performance of the grout by brushing, hammering, chipping, sand blasting or other similar dry mechanical means until sound and clean concrete surface is achieved. Irregular voids or projecting coarse aggregate need not be removed if they are sound, free of laitance and firmly embedded into the parent concrete.

1. Air compressors used to clean surfaces in contact with grout shall be the oil-less type or equipped with an oil trap in the airline to prevent oil from being blown onto the surface.

C. Roughen concrete lightly, but not to interfere with placement of grout.

D. Remove foreign materials from metal surfaces in contact with grout.

E. Align, level, and maintain final positioning of components to be grouted.

F. Wash concrete surfaces clean and then keep moist for at least 24 hours prior to the placement of nonshrink cementitious or cement grout. Saturation may be achieved by covering concrete with saturated burlap bags, use of a soaker hose, or flooding the surface. Upon completion of 24-hour period, remove visible water from the surface prior to grouting.

G. Support equipment during alignment and installation of grout by shims, wedges, blocks, or other approved means. Prevent bond of shims, wedges and blocking devices by bond breaking coatings and remove after grouting unless otherwise approved by Engineer. Grout voids created by the removal of shims, wedges, and blocks.

3.3 INSTALLATION - GENERAL

A. Placing of Grout:

1. Place grout material quickly and continuously.
2. Do not use pneumatic-pressure or dry-packing methods.
3. Apply grout from one side only to avoid entrapping air.
4. Do not vibrate placed grout mixture or permit placement if area is being vibrated by nearby equipment.
5. Thoroughly compact final installation and eliminate air pockets.

6. Do not remove leveling shims for at least 48 hours after grout has been placed.

B. Curing:

1. Prevent rapid loss of water from grout during first 48 hours by using wet burlap bags, soaker hoses or ponding.
2. Immediately after placement, protect grout from premature drying, excessively hot or cold temperatures, and mechanical injury.
3. After grout has attained its initial set, keep damp for minimum three days.

C. Reflect existing underlying expansion joints, partial contraction joints, and construction joints through the grout.

3.4 INSTALLATION - CONCRETE GROUT

A. ICRI CSP 6 (medium scarification). Protect and keep the surface clean until placement of concrete grout.

B. Remove debris and clean the surface by sweeping and vacuuming of all dirt and other foreign materials. Pressure wash the surface. Do not flush debris into tank drain lines.

C. Saturate the concrete surface for at least 24 hours prior to placement of the concrete grout by use of saturated burlap bags, soaker hoses or ponding. Remove excess water just prior to placement of the concrete grout. Place a cement slurry immediately ahead of the concrete grout so that the slurry is moist when the grout is placed. Work the slurry over the surface with a broom until it is coated with approximately 1/16 to 1/8-inch thick cement paste.

D. Steel trowel finish. Cure concrete grout as specified for cast-in-place concrete in Section 033010 “Miscellaneous Cast-In-Place Concrete.”

3.5 SCHEDULE

A. Use particular types of grout as follows:

1. General Purpose Nonshrink Cementitious Grout (CRD-C621 Grade D): Use at locations where nonshrink grout is indicated, except for base plates greater in area than 3-feet wide by 3-feet long.
2. Flowable (precision) Nonshrink Cementitious Grout (CRD-C621 Grade B or C): Use under base plates greater in area than 3-feet wide by 3-feet long (0.91 meters wide by 0.91 meters long). Use at locations indicated to receive flowable (precision) nonshrink grout. Flowable (precision), nonshrink, cementitious grout may be substituted for general purpose nonshrink cementitious grout.
3. Concrete Grout:

a. Use for concrete grout fill within liquid retaining structures and other locations where specifically indicated.

END OF SECTION 036000

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SECTION 050519 - POST-INSTALLED ANCHORS AND REINFORCING BARS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Post-installed adhesive and expansion anchors for concrete substrates.
2. Post-installed reinforcing bar dowels using adhesive anchoring system.

B. Related Requirements:

1. Section 033010 “Miscellaneous Cast-In-Place Concrete” and related Sections for concrete, reinforcement, and accessories.
2. Various Sections in Division 05 related to metals.
3. Various Sections in Divisions 40 and 43 related to process mechanical equipment.

1.3 ACTION SUBMITTALS

A. Post-Installed Expansion Anchors:

1. Design Data: Submit manufacturer’s specifications and data including recommended design values and physical characteristics for expansion anchors.
2. Product Data: Include construction details, material descriptions, dimensions of individual components and profiles, materials and finishes for post-installed expansion anchors installed into cracked concrete.
3. Installation Procedures: Submit procedures stating product proposed for use, and complete installation method.

B. Post-Installed Adhesive Anchoring System:

1. Design Data: Submit manufacturer’s specifications and data including recommended design values and physical characteristics, including temperature, humidity, and moisture limitations for adhesive anchoring system.
2. Product Data: Include construction details, material descriptions, dimensions of individual components and profiles, materials and finishes for post-installed adhesive anchoring system installed into cracked concrete.
3. Installation Procedures: Submit procedures stating method of drilling, product proposed for use, and complete installation method.

1.4 INFORMATIONAL SUBMITTALS

A. Installation procedure: Submit installation procedure for post-installed adhesive anchoring system; including method of drilling.

B. Certificates:

1. Submit current International Code Council (ICC) Evaluation Service Reports (ESR) for expansion anchors and adhesive anchoring system, for installation into cracked concrete, as applicable, indicating conformance with current ICC Evaluation Service (ICC-ES) Acceptance Criteria.

1.5 QUALITY ASSURANCE

A. General: Coordinate with the work of other Sections, field verifying dimensions and work of other trades adjoining items of work before installing items specified in this Section.

1.6 DELIVERY, STORAGE AND HANDLING

A. Deliver items to be incorporated into the work of other trades in sufficient time to be checked prior to installation.

B. Handle materials with cranes or derricks. Do not dump material off transportation vehicles or handle in ways that will cause damage.

C. Store materials elevated above grade and block up so they will not become bent or otherwise damaged.

D. Repair items that have become damage or corroded to satisfaction of Engineer prior to incorporating them into the work.

PART 2 - PRODUCTS

2.1 EXPANSION ANCHORS

A. Fastening to Concrete Substrate: Zinc plated carbon steel wedge type anchors, complete with zinc plated nuts and washers, unless otherwise noted.

B. Submerged or Weather Exposed Substrates: ASTM A276 Type 316 stainless steel wedge type anchors, complete with Type 316 stainless steel nuts and washers, unless otherwise noted.

C. Meet ICC ES AC01 or ICC ES AC193.

D. Length: When length or anchor embedment is not indicated, provide length sufficient to place the wedge and expansion cone portion of the anchor at least 1-inch behind concrete reinforcing steel.

E. Basis-of-Design:

1. Anchorage designs indicated are based on Hilti, Kwik-Bolt TZ, unless otherwise noted.
2. Acceptable Anchors: Hilti Kwik-Bolt TZ; Simpson Strong-Tie Strong Bolt 2 Wedge Anchor; DeWalt Power-Stud+ SD1, DeWalt Power-Stud+ SD6 for stainless steel; or approved equal.

2.2 ADHESIVE ANCHORING SYSTEM

A. Fastening to Concrete Substrate: Manufactured system consisting of post installed threaded rods, nuts, washers, other anchoring hardware, and chemical dispenser for installation in hammer drilled holes.

1. Anchors: Meet ICC ES AC308.
2. Injection Adhesive: Two-component epoxy system consisting of hardener and resin, furnished in pre-measured side-by-side cartridges which keep both components separate.
3. Adhesive Cartridge: Side-by-side design to accept static mixing nozzle which thoroughly blends both components and allows injection directly into a drilled hole.
4. Anchor: Zinc plated carbon steel or Type 316 stainless steel as indicated consisting of an all-thread anchor rod with nut and washer, of matching material to anchor rod.

    a. Basis-of-Design:

        1) Anchorage designs indicated are based on Hilti HIT- RE 500 V3, unless otherwise noted.
        2) Acceptable Manufacturers: Hilti HIT- RE 500 V3; Simpson Strong Tie SET-3G; ITW Ramset Red Head Epcon G5; or approved equal.

5. Reinforcing Bar Dowels: Reinforcing bar, per Section 033010.

    a. Basis-of-Design:

        1) Anchorage designs indicated are based on Hilti HIT- RE 500 V3, unless otherwise noted.
        2) Acceptable Manufacturers: Hilti HIT- RE 500 V3; Simpson Strong Tie SET-3G; ITW Ramset Red Head Epcon G5; or approved equal.

PART 3 - EXECUTION

3.1 INSTALLATION

A. General:

1. Install anchoring system in strict compliance with manufacturer's published installation instructions and approved Shop Drawings. Comply with recommended surface preparation, temperature, and moisture of substrate and ambient conditions.
2. Coordinate installation with Special Inspector.

3. Use drill bit of correct diameter and drill to required depth using rotary impact type hammer drills with carbide-tipped bits.
4. Drill holes perpendicular to concrete surface, unless otherwise indicated.
5. Use oil free compressed air to blast out loose particles and dust from drilled holes.

B. Expansion anchors:

1. Check expansion anchors for tightness a minimum of 24 hours after initial installation.

C. Adhesive anchoring system:

1. Inject adhesive and install anchors or reinforcing bar dowels that are clean and free of dirt, oil, grease, ice or other deleterious material which would reduce bond.

END OF SECTION 050519

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SECTION 055000 - METAL FABRICATIONS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Miscellaneous items fabricated from steel, aluminum or stainless steel.

B. Products furnished, but not installed, under this Section include the following:

1. Anchor bolts, and wedge-type inserts indicated to be cast into concrete or built into unit masonry.

C. Related Requirements:

1. Section 033010 "Miscellaneous Cast-in-Place Concrete" for installing anchor bolts, wedge-type inserts, and other items cast into concrete.
2. Section 036000 “Grouting” for non-shrink grout.
3. Section 050519 “Post-Installed Anchors and Reinforcing Bars” for anchors in various substrates.
4. Various Sections in Divisions 40 - 43 for process mechanical work scopes.

1.3 COORDINATION

A. Coordinate selection of shop primers with topcoats to be applied over them. Comply with paint and coating manufacturers' written recommendations to ensure that shop primers and topcoats are compatible with one another.

B. Coordinate installation of metal fabrications that are anchored to or that receive other work. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

1.4 ACTION SUBMITTALS

A. Shop Drawings: Show fabrication and installation details. Include plans, elevations, sections, and details of metal fabrications and their connections. Show anchorage and accessory items. Provide Shop Drawings for the following:

1. Miscellaneous steel items.
2. Miscellaneous aluminum items.
3. Miscellaneous stainless steel items.

1.5 INFORMATIONAL SUBMITTALS

A. Mill Certificates: Signed by aluminum, steel and stainless steel manufacturers, certifying that products furnished comply with requirements.

B. Paint Compatibility Certificates: From manufacturers of topcoats applied over shop primers, certifying that shop primers are compatible with topcoats.

1.6 QUALITY ASSURANCE

A. Welding Qualifications: Qualify procedures and personnel according to AWS D1.1/D1.1M, "Structural Welding Code - Steel."

B. Welding Qualifications: Qualify procedures and personnel according to the following:

1. AWS D1.1/D1.1M, "Structural Welding Code - Steel."
2. AWS D1.2/D1.2M, "Structural Welding Code - Aluminum."
3. AWS D1.6/D1.6M, "Structural Welding Code - Stainless steel."

C. Evaluation Reports: Post-installed concrete anchors, from ICC-ES for expansion anchors and adhesive anchor system, for installation into cracked concrete, as applicable, indicating conformance with current ICC ES Acceptance Criteria.

1.7 FIELD CONDITIONS

A. Field Measurements: Verify actual locations of walls and other construction contiguous with metal fabrications by field measurements before fabrication.

PART 2 - PRODUCTS

2.1 METALS

A. Metal Surfaces, General: Provide materials with smooth, flat surfaces unless otherwise indicated. For metal fabrications exposed to view in completed Work, provide materials without seam marks, roller marks, rolled trade names, or blemishes.

B. Steel Wide Flange Shapes: ASTM A992.

C. Steel Other Shapes, Plates, Shapes, and Bars: ASTM A36/A36M.

D. Stainless steel Sheet, Strip, and Plate: ASTM A240/A240M or ASTM A666, Type 316.

E. Stainless steel Bars and Shapes: ASTM A276, Type 316.

F. Rolled-Steel Floor Plate: ASTM A786/A786M, rolled from plate complying with ASTM A36/A36M or ASTM A283/A283M, Grade C or D.

G. Rolled-Stainless Steel Floor Plate: ASTM A793.

H. Steel Tubing: ASTM A500/A500M, Grade B cold-formed steel tubing.

I. Steel Pipe: ASTM A53/A53M, Type S Grade B Standard Weight (Schedule 40) unless otherwise indicated.

J. Cast Iron: Either gray iron, ASTM A48/A48M, or malleable iron, ASTM A47/A47M, unless otherwise indicated.

K. Aluminum Extruded Pipe: ASTM B429, Alloy 6063 T6 and Alloy 6061 T6 as indicated.

L. Aluminum Plate and Sheet: ASTM B209, Alloy 6061-T6.

M. Aluminum Extrusions: ASTM B221, Alloy 6061 T6.

N. Aluminum-Alloy Rolled Tread Plate: ASTM B632/B632M, Alloy 6061-T6.

O. Aluminum Castings: ASTM B26/B26M, Alloy 443.0-F.

P. Gray Iron Castings: ASTM A48, Class 35.

Q. Ductile Iron Castings: ASTM A536, Grade 65-45-12.

R. Stainless steel Bolts: ASTM F593, Type 316.

S. Stainless steel Nuts: ASTM F594, Type 316.

T. Carbon Steel Bolts and Studs: ASTM A307, Grade A (hot dip galvanized nuts and washers where noted).

U. High Strength Steel Bolts, Nuts and washers: ASTM F3125, Grade A325 (mechanically galvanized per ASTM B695, Class 50, where noted).

1. Elevated Temperature Exposure: Type I.
2. General Application: Type I or Type II.

V. Galvanizing: ASTM A123, Zn w/0.05 percent minimum Ni.

W. Galvanizing, hardware: ASTM A153, Zn w/0.05 percent minimum Ni.

X. Galvanizing, anchor bolts: ASTM F2329, Zn w/0.05 percent minimum Ni.

Y. Welding electrodes, steel: AWS A5.1 E70xx.

2.2 FASTENERS

A. Unless otherwise noted, provide steel machine bolts for the connection of carbon steel or iron; galvanized steel or stainless steel machine bolts for the connection of galvanized steel or iron; and stainless steel machine bolts for the connection of aluminum or stainless steel.

B. General: Unless otherwise indicated, provide Type 316 stainless steel fasteners for exterior use and zinc-plated fasteners with coating complying with ASTM B633 or ASTM F1941, Class Fe/Zn 5, at exterior walls. Select fasteners for type, grade, and class required.

1. Provide stainless steel fasteners for fastening aluminum.
2. Provide stainless steel fasteners for fastening stainless steel.

C. Steel Bolts and Nuts: Regular hexagon-head bolts, ASTM A307, Grade A; with hex nuts, ASTM A563; and, where indicated, flat washers.

D. Mechanically Galvanized Steel Bolts and Nuts: Regular hexagon-head bolts, ASTM F3125, Grade A325, Type 3; with hex nuts, ASTM A563, Grade C3; and, where indicated, flat washers.

E. Stainless steel Bolts and Nuts: Regular hexagon-head annealed stainless steel bolts, ASTM F593; with hex nuts, ASTM F594; and, where indicated, flat washers; Alloy Group 2.

F. Anchor Bolts: ASTM F1554, Grade 36, of dimensions indicated; with nuts, ASTM A563; and, where indicated, flat washers.

1. Provide standard headed bolts with heavy hex nuts and Grade A washers.
2. Where galvanized anchor bolts are indicated or specified, provide standard headed bolts with heavy hex nuts and Grade A washers, galvanize in accordance with ASTM F2329.

G. Machine bolts and nuts conforming to Federal Specification FF-B-575C. Bolts and nuts shall be hexagon type. Bolts, nuts, screws, washers and related appurtenances shall be Type 316 stainless steel.

H. Toggle Bolts: Shall be Hilti, Toggler Bolt or equal.

I. Cast-in-Place Anchors in Concrete: Either threaded type or wedge type unless otherwise indicated; galvanized ferrous castings, either ASTM A47 malleable iron or ASTM A27 cast steel. Provide bolts, washers, and shims as needed, all hot-dip galvanized per ASTM F2329.

2.3 MISCELLANEOUS ALUMINUM

A. Miscellaneous Aluminum: Formed true to detail, with clean, straight, sharply defined profiles and smooth surfaces of uniform color and texture and free from defects impairing strength or durability. Drill or punch holes. Smooth edges without burrs. Fabricate supplementary pieces necessary to complete each item though such pieces are not definitely shown or specified.

B. Connections and Accessories: Sufficient strength to safely withstand the stresses and strains to which they will be subjected. Close fitting exposed joints and jointed where least conspicuous.

Conceal threads on threaded connections where practical. Provide continuous welds or intermittent welds on welded connections as specified or shown. Dress face of welds flush and smooth. Weld on unexposed side as much as possible in order to prevent pitting or discoloration of the aluminum exposed surface. Provide holes for temporary field connections and for attachment of the work of other trades.

C. Miscellaneous Aluminum Items: Beams, angles, closure angles, grates, floor plates, stop plates, stair nosings, and other miscellaneous aluminum indicated and not otherwise specified.

D. Angle Frames for Roof Hatches, Beams, Grates, and Similar Items: Complete with welded strap anchors attached.

E. Stair Treads for Aluminum Stairs: As specified for grating and having cast abrasive non-slip nosing as approved.

F. Aluminum Finishes:

1. Mill Finish: Have cleaned and degreased mill finish on other aluminum items.

2.4 MISCELLANEOUS STEEL

A. Miscellaneous Steel Work: Formed true to detail, with clean, straight, sharply defined profiles and smooth surfaces of uniform color and texture and free from defects impairing strength or durability. Drill or punch holes. Smooth edges without burrs. Fabricate supplementary pieces necessary to complete each item though such pieces are not definitely shown or specified.

B. Connections and Accessories: Sufficient strength to safely withstand the stresses and strains to which they will be subjected. Close fitting exposed joints and jointed where least conspicuous. Conceal thread on threaded connections where practical. Provide continuous welds or intermittent welds on welded connections as specified or shown. Dress face of welds flush and smooth. Provide holes for temporary field connections and for attachment of the work of other trades.

C. Miscellaneous Steel Items: Beams, angles, lintels, metal stairs detailed on the Drawings, support brackets, base plates for other than structural steel or equipment, closure angles, bridge crane rails, monorail hoist beams, holddown straps and lugs, door frames, splice plates, subframing at roof openings and any other miscellaneous steel indicated and not otherwise specified.

D. Steel pipe pieces for sleeves, lifting attachments and other functions: Schedule 40 pipe unless otherwise indicated. Wall and floor sleeves, of steel pipe: Provide welded circumferential steel waterstops at mid-length.

E. Steel Finish Work: Thoroughly cleaned, by effective means, of loose mill scale, rust and foreign matter. Provide one shop coat of primer compatible with finish coat after fabrication but before shipment. Omit paint within 3 inches of proposed field welds. Apply paint to dry surfaces and be thoroughly and evenly spread and well worked into joints and other open spaces.

F. Galvanizing, where required: Use hot-dip zinc process after fabrication, coating not less than 2 oz/sq.ft. of surface.

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2.5 MISCELLANEOUS STAINLESS STEEL

A. Miscellaneous Stainless Steel Work: Formed true to detail, with clean, straight, sharply defined profiles and smooth surfaces of uniform color and texture and free from defects impairing strength or durability. Drill or punch holes. Smooth edges without burrs. Fabricate supplementary pieces necessary to complete each item though such pieces are not definitely shown or specified.

B. Connections and accessories: Sufficient strength to safely withstand the stresses and strains to which they will be subjected. Close fitting exposed joints, jointed where least conspicuous. Conceal threads on threaded connections where practical. Provide continuous welds or intermittent welds on welded connections as specified or shown. Dress face of welds flush and smooth. Provide holes for temporary field connections and for attachment of the work of other trades.

C. Beams, angles, bar racks, and other miscellaneous stainless steel.

2.6 CASTINGS:

A. General: Good quality, strong, tough, even-grained, smooth, free from scale, lumps, blisters, sand holes, and other defects. Thoroughly clean castings to remove foreign matter, and deleterious films. Castings will be subjected to a hammer inspection in the field by Engineer. Damaged castings may be rejected and replaced at no cost to Owner.

B. Matching Surfaces: Machine to a true plane surface allowing contact surfaces to seat without rocking. Provide allowances in patterns so specified thickness is not reduced to obtain finished surfaces. Castings will not be acceptable if actual weight is less than 95 percent of theoretical weight computed from dimensions. Provide facilities for weighing castings in the presence of Engineer.

2.7 FABRICATION, GENERAL

A. Shop Assembly: Preassemble items in the shop to greatest extent possible. Disassemble units only as necessary for shipping and handling limitations. Use connections that maintain structural value of joined pieces. Clearly mark units for reassembly and coordinated installation.

B. Cut, drill, and punch metals cleanly and accurately. Remove burrs and ease edges to a radius of approximately 1/32-inch unless otherwise indicated. Remove sharp or rough areas on exposed surfaces.

C. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing work.

D. Form exposed work with accurate angles and surfaces and straight edges.

E. Weld corners and seams continuously to comply with the following:

1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
2. Obtain fusion without undercut or overlap.
3. Remove welding flux immediately.
4. At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing and contour of welded surface matches that of adjacent surface.

F. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners or welds where possible. Where exposed fasteners are required, use Phillips flat-head (countersunk) fasteners unless otherwise indicated. Locate joints where least conspicuous.

G. Fabricate seams and other connections that are exposed to weather in a manner to exclude water. Provide weep holes where water may accumulate.

H. Cut, reinforce, drill, and tap metal fabrications as indicated to receive finish hardware, screws, and similar items.

I. Provide for anchorage of type indicated; coordinate with supporting structure. Space anchoring devices to secure metal fabrications rigidly in place and to support indicated loads.

J. Where units are indicated to be cast into concrete or built into masonry, equip with integrally welded steel strap anchors, 1/4 by 1-inch, with a minimum 6-inch embedment and 1 1/2-inch hook, not less than 8 inches from ends and corners of units and 24 inches o.c., unless otherwise indicated.

2.8 FINISHES, GENERAL

A. Finish metal fabrications after assembly.

B. Finish exposed surfaces to remove tool and die marks and stretch lines, and to blend into surrounding surface.

2.9 STEEL AND IRON FINISHES

A. Galvanizing: Hot-dip galvanize items as indicated to comply with ASTM A153/A153M for steel and iron hardware and with ASTM A123/A123M for other steel and iron products. Limit maximum nickel (Ni) content of galvanizing zinc to 0.05 percent.

1. Do not quench or apply post galvanizing treatments that might interfere with paint adhesion.

B. Preparation for Shop Priming Galvanized Items: After galvanizing, thoroughly clean railings of grease, dirt, oil, flux, and other foreign matter, and treat with metallic phosphate process.

2.10 ALUMINUM FINISHES

A. As-Fabricated Finish: AA-M12.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Install items except those to be embedded in concrete or other masonry which shall be installed under Division 03 respectively. Install items to be attached to concrete or masonry after such work is completed in accordance with the details shown. Fastening to wood plugs in masonry will not be permitted.

1. Clean and repair, after installation, zinc coating which has been burned by welding, abraded, or otherwise damaged. Thoroughly clean damaged area and remove all traces of welding flux and loose or cracked zinc coating prior to painting. Paint the cleaned area per the requirements of ASTM A780.
2. Install specialty products in accordance with the manufacturer's recommendations.
3. Weld headed anchor studs in accordance with manufacturer's recommendations.
4. Cutting, Fitting, and Placement: Perform cutting, drilling, and fitting required for installing metal fabrications. Set metal fabrications accurately in location, alignment, and elevation; with edges and surfaces level, plumb, true, and free of rack; and measured from established lines and levels.
5. Fit exposed connections accurately together to form hairline joints. Weld connections that are not to be left as exposed joints but cannot be shop welded because of shipping size limitations. Do not weld, cut, or abrade surfaces of exterior units that have been hot-dip galvanized after fabrication and are for bolted or screwed field connections.
6. Field Welding: Comply with the following requirements:

    a. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
    b. Obtain fusion without undercut or overlap.
    c. Remove welding flux immediately.
    d. At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing and contour of welded surface matches that of adjacent surface.

7. Fastening to In-Place Construction: Provide anchorage devices and fasteners where metal fabrications are required to be fastened to in-place construction. Provide threaded fasteners for use with concrete and masonry inserts, toggle bolts, through bolts, lag screws, wood screws, and other connectors.
8. Provide temporary bracing or anchors in formwork for items that are to be built into concrete, masonry, or similar construction.
9. Corrosion Protection: Coat concealed surfaces of aluminum and steel that come into contact with grout, concrete, masonry, wood, or dissimilar metals with the following:

    a. Aluminum Contacting a Dissimilar Metal: Apply heavy brush coat of zinc-chromate primer followed by two coats of aluminum metal and masonry paint to the dissimilar metal.
    b. Aluminum Contacting Masonry or Concrete: Apply heavy coat of approved alkali resistant paint to the masonry or concrete.

c. Aluminum Contacting Wood: Apply two coats of aluminum metal and masonry paint to the wood.
d. Steel Contacting Exposed Concrete or Masonry: Apply heavy bitumastic troweling mastic.
e. Between aluminum stair treads, and steel supports, insert 1/4-inch thick neoprene isolator pads, 85 plus or minus 5 Shore A durometer, sized for full width and length of bracket or support.

3.2 ADJUSTING AND CLEANING

A. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas and repair galvanizing to comply with ASTM A780/A780M.

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SECTION 055200 - METAL RAILINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Aluminum pipe and tube guardrails, railings, balusters, and fittings.

B. Related Requirements:

1. Section 033010 “Miscellaneous Cast-In-Place Concrete” for execution requirements for placement of anchors, as specified in this Section, in concrete.
2. Section 055000 “Metal Fabrications” for attachment plates, angles, including anchorage.

1.3 ACTION SUBMITTALS

A. Shop Drawings: Indicate profiles, sizes, connection attachments, anchorage, size and type of fasteners, and accessories.

B. Submit design drawings and calculations, including anchorage to concrete calculations, signed and sealed by Professional Engineer registered in the State of Florida.

1.4 INFORMATIONAL SUBMITTALS

A. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

B. Test Reports: Certified copy of mill test reports on each aluminum proposed for use showing physical properties and chemical analysis.

C. Certificates: Certify that welders have been qualified under AWS within previous 12 months to perform required welds.

D. Field Quality-Control Submittals: Indicate results of Contractor-furnished tests and inspections.

E. Qualifications Statements:

1. Submit qualifications for fabricator and erector.
2. Submit manufacturer's approval of fabricator and erector.

1.5 QUALITY ASSURANCE

A. Perform Work for structural aluminum according to AA ADM 1.

B. Finish welded joints according to NOMMA Guideline 1, Finish #1.

C. Welding Qualifications: Qualify procedures and personnel according to the following:

1. AWS D1.2/D1.2M, "Structural Welding Code - Aluminum."

D. Maintain on-site one copy of each standard affecting the Work of this Section.

1.6 QUALIFICATIONS

A. Fabricator: Company specializing in fabricating products specified in this Section with minimum three years' documented experience and approved by manufacturer.

B. Erector: Company specializing in performing Work of this Section with minimum three years' documented experience and approved by manufacturer.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

1.8 EXISTING CONDITIONS

A. Field Measurements: Verify field measurements prior to fabrication. Indicate field measurements on Shop Drawings.

PART 2 - PRODUCTS

2.1 GENERAL

A. Provide 2 rail mechanically fastened or welded pipe railing systems as indicated, fabricated with 1-1/2-inch nominal diameter pipe. Provide Schedule 80 pipe posts, minimum and rails and handrail of Schedule 40 pipe, minimum. Provide continuous posts and top rails. Spacing of posts not to exceed 5 feet on center and shall be uniformly spaced except as otherwise indicated. Install railing posts in vertical position.

1. Welding: Provide circumferential welds ground smooth and even to produce a railing that is neat in appearance and structurally sound. Weld in conformity with AWS standards for materials being joined. Cope and fasten rail to post connections with continuous welds. Provide handrail system free of burrs, sharp edges or protrusions on welds. Clean and

hand buff welds after fabrication so welds and surrounding area blend with the adjacent finish.

a. For welding aluminum, use a weld filler alloy that is compatible with alloys to be joined, that will not discolor the pieces to be joined, and that will not be discolored by anodizing.

2. Mechanical Fasteners: Locate unobtrusively in countersunk holes with the top, flush with rail surface.
3. Bending: Form bends in railings as indicated. No distortion of circular railing shape will be allowed. Make bends and terminal sections without use of fittings. Provide corner bends mitered and welded.

B. Assemble railing in sections as long as practical, but not greater than 24 feet in length. Provide field splice when an assembled section is to be attached to another section.

1. Field Splices: Use internal splice sleeves located within 8 inches of railing posts. Weld sleeves to rails on one side and fasten with set screws to rails on other side. Detail field splice to take differential expansion between railing system and supporting structure.
2. When field splice occurs in a railing panel crossing a structure expansion joint, weld sleeves to rails on one side and be free to slide in rails on other side. Detail field splice to take same movement as structure expansion joint.

C. Provide bases or supports for railing posts and handrail as indicated.

1. Where guardrail and handrail is to be fastened to walls, provide screwed wall flanges fastened to walls with three 3/8-inch stainless steel expansion anchors. The horizontal projection of handrail support off the wall shall provide 2-1/4-inch minimum clearance around handrail.

D. Provide toe boards on railings adjacent to a drop elevation of 4 feet or more. Toeboards are not required on inclined portion of stairway railings or where concrete or steel curbs exist at 4 inches or more in height. Provide toeboards fabricated of 4-inch high channels of same material as railing, having a minimum thickness of 1/8-inch and flanges of not less than 3/4-inch or more than 1-1/2-inch in width. Position toeboards with a maximum clearance of 1/4-inch from floor and fasten to railing posts with 1/4-inch stainless steel U-bolts, with J-bolts at corner posts, and with clip angles and two 1/4-inch stainless steel expansion bolts at walls.

E. Protect railings by paper, an approved coating, or both against scratching, splashes of mortar, paint, or other defacements during transportation, erection, and until adjacent work is complete. Remove protective materials and make surfaces clean and free from stains, marks, or defects.

2.2 MATERIALS

A. Aluminum Railing System: Provide a welded or mechanically fastened, seamless, extruded aluminum pipe system.

1. Rails: ASTM B429 Alloy 6063-T6.
2. Posts: ASTM B429 Alloy 6061-T6.

3. Splice and reinforcing sleeves, brackets, end caps, toeboards, and similar components: ASTM B221 or ASTM B209, Alloy 6063-T6 or 6061-T6.
4. Cast Fittings: ASTM B26/B26M, Alloy No. 214.
5. Railing System Fastening Hardware: ASTM A276, Type 316 stainless steel.
6. Finishes: Mill finish.

2.3 MISCELLANEOUS MATERIALS

A. Welding Rods and Bare Electrodes: Select according to AWS specifications for metal alloy welded.

1. For aluminum railings, provide type and alloy as recommended by producer of metal to be welded and as required for color match, strength, and compatibility in fabricated items.

B. Bituminous Paint: Cold-applied asphalt emulsion complying with ASTM D1187/D1187M.

2.4 FABRICATION

A. Fit and shop-assemble components in largest practical sizes for delivery to Site, but not to exceed 24 feet in length.

B. Fabricate components with joints tightly fitted and secured. Furnish spigots and sleeves to accommodate site assembly and installation.

C. Form simple and compound curves by bending pipe in jigs to produce uniform curvature for each repetitive configuration required. Maintain cylindrical cross section of pipe throughout entire bend without buckling, twisting, cracking, or otherwise deforming exposed surfaces.

D. Exposed Mechanical Fastenings: Flush countersunk screws or bolts, unobtrusively located, and consistent with design of component, except where otherwise noted.

E. Supply components required for anchorage of fabrications. Fabricate anchors and related components of same material and finish as fabrication, except where otherwise noted.

F. Grind exposed joints flush and smooth with adjacent finish surface. Make exposed joints butt tight, flush, and hairline. Ease exposed edges to small uniform radius.

G. Accurately form components to each other, and to building structure.

H. Accommodate expansion and contraction of members and building movement without damage to connections or members.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that field conditions are acceptable and are ready to receive Work.

3.2 PREPARATION

A. Clean and strip aluminum where site welding is required.

3.3 INSTALLATION

A. Install items, except those to be embedded in concrete under Division 03. Install items to be attached to concrete or masonry after such work is completed in accordance with indicated details. Do not fasten to wood plugs in masonry.

B. Install components plumb, level, and square, accurately fitted, and free from distortion or defects.

C. Anchor railings to structure with anchors, plates, angles.

D. Conceal bolts and screws whenever possible. Where not concealed, use flush countersunk fastenings.

E. Assemble with spigots and sleeves to accommodate tight joints and secure installation.

F. Protect steel surfaces that come into contact with exposed concrete or masonry with protective coating of approved heavy bituminous troweling mastic applied in accordance with manufacturer's instructions prior to installation.

G. Where aluminum contacts a dissimilar metal, apply heavy brush coat of zinc-chromate primer followed by two coats of aluminum metal and masonry paint to the dissimilar metal.

H. Where aluminum contacts masonry or concrete, apply heavy coat of approved alkali resistant paint to masonry or concrete. Coat, with heavy coat of bituminous paint, concealed surfaces of aluminum that are in contact with grout, concrete, masonry, wood, or dissimilar metals.

I. Where aluminum contacts wood, apply two coats of aluminum metal and masonry paint to the wood.

J. Between aluminum gratings, aluminum stair treads, or aluminum handrail brackets and steel supports, insert 1/4-inch thick neoprene isolator pads, 85 plus or minus 5 Shore A durometer, sized for full width and length of bracket or support.

3.4 CLEANING AND PROTECTION

A. Clean aluminum by washing thoroughly with clean water and soap and rinsing with clean water.

B. Protect finishes of railings from damage during construction period with temporary protective coverings approved by railing manufacturer. Remove protective coverings at time of Substantial Completion.

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SECTION 083483 - FLOOR DOORS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Aluminum floor doors.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include construction details materials, individual components and profiles, and finishes.

B. Product Schedule: For floor doors. Use same designations indicated on Drawings. Confirm size per pump manufacturer’s recommendations.

PART 2 - PRODUCTS

2.1 ALUMINUM FLOOR DOORS

A. Gutter Channel Frame Aluminum Floor Door:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. Halliday Products.
b. Or approved equal.

2. Frame: Mill finish aluminum, gutter profile, with integral drainage coupling and perimeter gasket.
3. Door: Double leaf; 1/4-inch-thick, diamond-pattern mill-finish aluminum plate.
4. Loading Capacity: 300-lbf/sq. ft. pedestrian live load.
5. Options: Odor gasket.
6. Hardware:

a. Material and Finish: Type 316 stainless steel, including latch and lifting mechanism assemblies, hold-open arms, brackets, hinges, pins, and fasteners.
b. Hinges: Heavy-duty butt hinges with stainless steel pins.
c. Operating Mechanism: Adjustable counterbalancing springs, heavy-duty hold-open arm that automatically locks door open at 90 degrees, release handle with vinyl grip that allows for one-handed closure, and recessed lift handle.
d. Latch: Stainless steel slam latch.
e. Lock: Recessed padlock hasp with cover.

B. Safety Accessories: Safety grating.

2.2 MATERIALS

A. Aluminum Extrusions: ASTM B221, Alloy 6063-T6.

B. Aluminum-Alloy Rolled Tread Plate: ASTM B632/B632M, Alloy 6061-T6.

C. Aluminum Sheet: ASTM B209, alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated.

D. Frame Anchors: Same material as door face.

E. Inserts, Bolts, and Anchor Fasteners: Hot-dip galvanized steel according to ASTM A153/A153M or ASTM F2329.

2.3 FABRICATION

A. General: Provide floor doors manufactured as integral units ready for installation.

B. Metal Surfaces: For metal surfaces exposed to view in completed Work, provide materials with smooth, flat surfaces without blemishes. Do not use materials with exposed pitting, seam marks, roller marks, rolled trade names, or roughness.

C. Grind exposed welds smooth and flush with adjacent surfaces. Furnish attachment devices and fasteners of type required to secure floor doors to types of supports indicated.

D. Latching Mechanisms: Furnish number required to hold doors in flush, smooth plane when closed.

1. For cylinder locks, furnish two keys per lock and key locks alike.
2. For recessed panel doors, provide access sleeves for each locking device. Furnish plastic grommets and install in holes cut through finish.

E. Aluminum: After fabrication, apply manufacturer's standard protective coating on aluminum that comes in contact with concrete.

2.4 FINISHES

A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

B. Protect mechanical finishes on exposed surfaces from damage by applying strippable, temporary protective covering before shipping.

C. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within range of approved Samples and are assembled or installed to minimize contrast.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION, GENERAL

A. Comply with manufacturer's written instructions for installing floor doors.

B. Apply intumescent fire protection to underside of floor door cover to minimum thickness required by intumescent fire protection manufacturer for fire rating indicated.

3.3 FIELD QUALITY CONTROL

A. Repair or remove and replace installations where inspections indicate that they do not comply with specified requirements.

B. Reinspect repaired or replaced installations to determine if replaced or repaired door assembly installations comply with specified requirements.

3.4 ADJUSTING

A. Adjust doors and hardware, after installation, for proper operation.

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SECTION 099676.13 – WASTEWATER COLLECTION SYSTEM COATINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes surface preparation and application of high-performance coating systems on concrete vertical and horizontal surfaces.

B. Related Requirements:

1. 055000 “Metal Fabrications” for shop priming of structural steel with primers specified in this Section.

1.3 DEFINITIONS

A. MPI Gloss Levels: Following define gloss levels according to ASTM D523:

1. MPI Gloss Level 1 - Traditional Matte or Flat Finish: Maximum five units at 60 degrees and 10 units at 85 degrees.
2. MPI Gloss Level 2 - Velvet-Like Finish: Maximum 10 units at 60 degrees and 10 to 35 units at 85 degrees.
3. MPI Gloss Level 3 - Traditional Eggshell-Like Finish: 10 to 25 units at 60 degrees and 10 to 35 units at 85 degrees.
4. MPI Gloss Level 4 - Satin-Like Finish: 20 to 35 units at 60 degrees and minimum 35 units at 85 degrees.
5. MPI Gloss Level 5 - Traditional Semi-Gloss Finish: 35 to 70 units at 60 degrees.
6. MPI Gloss Level 6 - Traditional Gloss: 70 to 85 units at 60 degrees.
7. MPI Gloss Level 7 - High Gloss: Minimum 85 units at 60 degrees.

B. Mild Exposure: Normal outdoor weathering and standard industrial exposures are considered mild environments. A normal industrial setting is one with low to moderate levels of humidity and condensation and little development of mold and mildew. A mild environment has only limited exposure to chemical fumes or mist, and occasional occurrences of chemical spills or splash. Regular cleaning with standard commercial chemical cleaning agents, with only occasional use of stronger chemical cleaning agents, is also characteristics of a mild environment. Metal corrosion will occur in a mild environment, but it is minimal. These are generally dry areas with little to no Hydrogen Sulfide (H2S), Chlorine, or other corrosive chemicals, or the area is damp.

C. Moderate Exposure: An atmosphere that can be characterized as corrosive, within reasonable limits, is considered a moderate environment. In an industrial setting, a moderate environment

indicates intermittent exposure to high humidity and condensation with occasional development of mold and mildew. Exposure to heavy concentrations of chemical fumes or mist and accidental chemical spills or splash occurs occasionally in a moderate environment. Regular use of strong chemicals rather than standard commercial cleaning agent also changes a mild environment into a moderate one. Metal corrosion is common in a moderate environment.

D. Severe Exposure: An aggressively corrosive industrial or predominantly chemical environment with regular exposure to strong chemical fumes, mists, and dust is considered a severe environment. In an industrial setting, a severe environment is one with sustained exposure to high humidity and condensation that results in heavy development of mold and mildew. Frequent spilling and splashing of strong chemicals (acids, alkalis, oxidizers, and solvents) are also characteristic of a severe environment. Metal corrosion can be expected in a severe environment. Immersion conditions, marine environment with sustained exposure to saltwater spray, and arctic environment with long periods of extremely low temperature are considered severe environments. These are areas where if no high-performance coatings are applied on steel or concrete, very early failure and structural damage will be evident.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product. Include preparation requirements and application instructions.

1. Indicate VOC content.

B. Product List: Use same designations indicated on Drawings and in Collection System Coating Schedule. Include color designations and product runs (batch numbers).

1.5 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Coatings: 5 percent, but not less than 1 gal. of each material and color applied.

1.6 QUALITY ASSURANCE

A. Mockups: Apply mockups of each coating system indicated to verify preliminary selections made under Sample submittals, to demonstrate aesthetic effects, and to set quality standards for materials and execution.

1. Engineer will select one surface to represent surfaces and conditions for application of each coating system. Engineer will designate items or areas required.
2. Final approval of color selections will be based on mockups.

a. If preliminary color selections are not approved, apply additional mockups of additional colors selected by Engineer at no added cost to Owner.

3. Approval of mockups does not constitute approval of deviations from Contract Documents contained in mockups unless Engineer specifically approves such deviations in writing.
4. Subject to compliance with requirements, approved mockups may become part of completed Work if undisturbed at time of Substantial Completion.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 degrees F.

1. Maintain containers in clean condition, free of foreign materials and residue.
2. Remove rags and waste from storage areas daily.
3. Deliver materials on site in factory sealed containers from the manufacturer. Do not use materials from previous jobs.

1.8 FIELD CONDITIONS

A. Apply coatings only when temperature of surfaces to be coated and ambient air temperatures are within the coatings manufacturer's recommendations.

B. Do not apply coatings when relative humidity exceeds 85 percent; at temperatures less than 5 degrees F above the dew point and rising; or to damp or wet surfaces.

C. Lead Paint: It is not expected that lead paint will be encountered in the Work.

1. If suspected lead paint is encountered, do not disturb; immediately notify Engineer and Owner.

D. Do not apply exterior coatings in snow, rain, fog, mist, and in conditions that do not meet the manufacturer's recommendations.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1. Raven Lining Systems (RLS).

2.2 HIGH-PERFORMANCE COATINGS

A. Material Compatibility:

1. Each coating system within indicated substrates uses compatible material with one another, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
2. Topcoat manufacturer recommends products in writing for use in each coating system coat and on indicated substrate.
3. Use products from same manufacturer for each coat in coating system.

B. Colors: Manufacturer's standard.

2.3 SOURCE QUALITY CONTROL

A. Testing of Coating Materials: Owner reserves the right to invoke the following procedure:

1. Owner will engage services of qualified testing agency to sample coating materials. Contractor will be notified in advance and may be present when samples are taken. If coating materials have already been delivered to Project site, samples may be taken at Project site. Samples will be identified, sealed, and certified by testing agency.
2. Testing agency will perform tests for compliance with product requirements.
3. Owner may direct Contractor to stop applying coatings if test results show materials being used do not comply with product requirements. Contractor shall remove noncomplying coating materials from Project site, pay for testing, and recoat surfaces coated with rejected materials. Contractor will be required to remove rejected materials from previously coated surfaces if, on recoating with complying materials, both coatings are incompatible.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.

B. Maximum Moisture Content of Concrete Substrates: 12 percent, when measured with electronic moisture meter.

C. Verify suitability of substrates, including surface conditions and compatibility, with existing finishes and primers.

1. Application of coating indicates acceptance of surfaces and conditions.
2. Recoating of Previously Coated Surfaces: Verify conditions and compatibility between new and existing high-performance coating products.

D. Proceed with coating application only after unsatisfactory conditions have been corrected. Application of coating indicates acceptance of surfaces and conditions.

3.2 PREPARATION

A. Comply with manufacturer's written instructions applicable to substrates and coating systems indicated.

B. Remove hardware, covers, plates, and similar items already in place that are removable and are not to be coated.

1. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and coating.
2. After completing coating operations, use workers skilled in trades involved to reinstall items that were removed.
3. Remove surface-applied protection if any.

C. Clean substrates of substances that could impair bond of coatings, including dust, dirt, oil, grease, and incompatible paints and encapsulants.

1. Remove incompatible primers and reprime substrate with compatible primers or apply tie coat as required to produce coating systems indicated.

D. Concrete Substrates: Remove release agents, curing compounds, efflorescence, and chalk. Do not coat surfaces if moisture content or alkalinity of surfaces to be coated exceeds that permitted in manufacturer's written instructions.

1. Concrete Floors: Remove oil, dust, grease, dirt, and other foreign materials. Comply with SSPC-SP-13/NACE 6 or ICRI 310.2R.
2. Clean surfaces with pressurized water. Use pressure range of 4000 to 10,000 psi at 6 to 12 inches.
3. Abrasive blast clean surfaces to comply with SSPC-SP-13/NACE 6.

3.3 APPLICATION

A. Apply high-performance coatings in accordance with manufacturer's written instructions.

1. Use applicators and techniques suited for coating and substrate indicated.
2. Coat surfaces behind movable equipment and furniture same as similar exposed surfaces. Before final installation, coat surfaces behind permanently fixed equipment or furniture with prime coat only.
3. Coat backsides of access panels, removable or hinged covers, and similar hinged items to match exposed surfaces.
4. Do not apply coatings over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.

B. Tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of the same material are to be applied. Tint undercoats to match color of finish coat but provide sufficient difference in shade of undercoats to distinguish each separate coat.

C. If undercoats or other conditions show through final coat, apply additional coats until cured film has uniform coating finish, color, and appearance.

D. Apply coatings to produce surface films without cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, or other surface imperfections. Produce sharp glass lines and color breaks.

E. Film Thickness: Apply paint in wet film thickness (WFT) recommended by high-performance manufacturer to achieve specified dry film thickness (DFT) for each coat of paint. Since DFT varies among manufacturers, this reference is not included in Article "Collection Systems Coating Schedule."

3.4 FIELD QUALITY CONTROL

A. Dry Film Thickness Testing: Owner may engage services of qualified testing and inspecting agency to inspect and test coatings for dry film thickness.

1. Contractor shall touch up and restore coated surfaces damaged by testing.
2. If test results show that dry film thickness of applied coating does not comply with coating manufacturer's written instructions, Contractor shall pay for testing and apply additional coats as needed to provide dry film thickness that complies with coating manufacturer's written instructions.

3.5 CLEANING AND PROTECTION

A. After completing coating application, clean spattered surfaces. Remove spattered coatings by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.

B. Protect work of other trades against damage from coating operation. Correct damage to work of other trades by cleaning, repairing, replacing, and recoating, as approved by Engineer, and leave in undamaged condition.

C. At completion of construction activities of other trades, touch up and restore damaged or defaced coated surfaces.

3.6 COLLECTION SYSTEMS COATING SCHEDULE

A. Concrete Protection:

1. Severe Exposure:

a. High Strength High Chemical Resistant Epoxy System:

1) Prime Coat:

a) RLS: Per Manufacturer recommendation to meet warranty requirements.

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2) Topcoat: (MPI Gloss Level 5 or 6).

a) RLS: Raven 405.

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SECTION 260510 – LIMITED ELECTRICAL FOR SMALL PROJECTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Copper power and control wire rated 600V or less.
2. Low-voltage instrumentation cable.
3. Connectors, splices, and terminations.
4. Grounding and bonding components.
5. Support systems for raceways, boxes, and electrical equipment.
6. Metal conduits and fittings.
7. Nonmetallic conduit and fittings.
8. Boxes, enclosures, and cabinets.
9. Handholes and boxes for exterior underground cabling.
10. Transformer Panelboard Assembly.
11. Fuses.
12. Fused Safety Switches.
13. Surge protective devices.
14. Identification requirements.

1.3 DEFINITIONS

A. ARC: Aluminum rigid conduit. See also RAC.

B. Direct Buried: Duct or a duct bank that is buried in the ground, without any additional casing materials such as concrete.

C. Duct: A single duct or multiple ducts. Duct may be installed singly or as a component of a duct bank.

D. Duct Bank:

1. Two or more ducts installed in parallel, with or without additional casing materials.
2. Multiple duct banks.

E. EMI: Electromagnetic interference.

F. Low Voltage: As defined in NFPA 70 for circuits and equipment operating at less than 50V or for remote-control and signaling power-limited circuits.

G. RAC: Rigid aluminum conduit. See also ARC.

H. RoHS: Restriction of Hazardous Substances.

I. Trafficways: Locations where vehicular or pedestrian traffic is a normal course of events.

J. National Electrical Code (NEC) / NFPA conduit types:

1. RMC – rigid metal conduit.
2. FMC – flexible metal conduit.
3. LFMC – liquidtight flexible metal conduit.
4. PVC – rigid polyvinyl chloride conduit.
5. LFNC – liquidtight flexible nonmetallic conduit.
6. RNC – rigid nonmetallic conduit.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product used on this project.

B. Shop Drawings:

1. Precast Handholes: Include plans, elevations, sections, and details.

C. Installation Working Drawings: For underground conduit routing.

1.5 INFORMATIONAL SUBMITTALS

A. Field quality-control reports.

PART 2 - PRODUCTS

2.1 ELECTRICAL MATERIALS

A. Listed and labeled as defined in NFPA 70, by qualified testing agency, and marked for intended location and application.

B. Comply with associated UL Standards as applicable and listed in this specification.

2.2 WIRE

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1. Alpha Wire Company.
2. Encore Wire Corporations.
3. General Cable Technologies Corporation.

4. Okonite Company (The).
5. Service Wire Co.
6. Southwire Company.

B. Description: Flexible, insulated and uninsulated, drawn copper current-carrying conductor with an overall insulation layer or jacket, or both, rated 600 V.

C. Standards:

1. RoHS compliant.
2. Conductor and Cable Marking: Comply with wire and cable marking according to UL's "Wire and Cable Marking and Application Guide."

D. Conductors: Copper, complying with ASTM B3 for bare annealed copper and with ASTM B8 for stranded conductors.

E. Size: Minimum No. 12 AWG for power circuits, minimum No. 14 AWG for control circuits.

F. Stranding: Refer to Part 3 “Conductor Applications” Article.

G. Conductor Insulation: Refer to Part 3 “Conductor Applications” Article.

1. Type RHW-2: Comply with UL 44.
2. Type TC-ER: Comply with NEMA WC 70/ICEA S-95-658 and UL 1277.
3. Type THHN and Type THWN-2: Comply with UL 83.
4. Type XHHW-2: Comply with UL 44.

2.3 INSTRUMENTATION CABLE

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1. Belden.
2. Rockbestos.

B. Single of Multiple Paired Cable: NEC type ITC (Instrumentation Tray Cable), UL Type TC for 4-20mA process instrumentation signals and use under NEC Article 72.

1. One or Multi-pair, twisted, shielded, No. 16 AWG, stranded (19x29) tinned-copper conductors.
2. XLPE insulation, 600V.
3. Shield: 100 percent aluminum/polyester foil with drain wire. Pairs individually shielded.
4. PVC jacket with manufacturer’s identification.
5. Standards: UL 1277 Type TC, UL 1581.

2.4 CONNECTORS, SPLICES, AND TERMINATIONS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1. 3M Electrical Products.
2. Ideal Industries, Inc.
3. TE Connectivity Ltd.
4. Thomas & Betts Corporation; A Member of the ABB Group.

B. Description: Factory-fabricated connectors, splices, and lugs of size, ampacity rating, material, type, and class for application and service indicated; listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and use.

C. Lugs: One piece, seamless, designed to terminate conductors specified in this Section.

1. Material: Tin-plated copper.
2. Type:

a. Locking spade with insulated sleeve for No. 10 AWG and smaller.
b. One hole with long barrels for No. 8 AWG to No. 4/0 AWG.
c. Two holes with long barrels for 250 kcmil and larger.

3. Termination: Compression for No. 8 AWG and larger.

D. Connectors:

1. Solderless pressure type (wirenuts) for No. 10 AWG and smaller.
2. Pre-filled with silicone-based sealant for exterior, wet, or corrosive locations.
3. Split bolt type for No. 8 AWG and larger splices.

E. Motor Terminations: Mechanical compression ring type, secured with bolt, nut, and spring washer. Insulated with Raychem type RVC, roll-on stub insulator or equal.

2.5 GROUNDING AND BONDING MATERIALS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1. ERICO; a brand of nVent.
2. Hubbell Incorporated (Construction and Energy Group).
3. O-Z/Gedney; a brand of Emerson Industrial Automation.
4. Thomas & Betts Corporation; A Member of the ABB Group.

B. Standard: Comply with UL 467 for grounding and bonding materials and equipment.

C. Grounding Conductors:

1. Insulated conductors to match corresponding 600V phase conductor insulation requirements.
2. Bare copper conductors: tin-plated.

D. Ground rods: Copper-clad steel, sectional type; 3/4-inch diameter by 10-foot; minimum copper thickness 0.25 mm (10 mil).

E. Grounding conduit hubs: Malleable iron type, mechanical type, terminal with threaded hub, sized for the associated conduit.

F. Waterpipe ground clamps: cast bronze saddle type, sized for the associated water pipe.

G. Exothermic weld: CADWELD process, or equal. Molds and powder furnished by same manufacturer and selected for specific combination of conductors and connected items. Use low emission type, CADWELD EXOLON or equal for welds used indoors in occupied buildings or confined spaces.

2.6 SUPPORT SYSTEMS

A. Aluminum Channel:

1. Standard: Comply with MFMA-4 factory-fabricated components for field assembly.
2. Channel Material: 6063-T5 aluminum alloy.
3. Fittings and Accessories Material: 5052-H32 aluminum alloy.

B. Stainless Steel Channel:

1. Standard: Comply with MFMA-4 factory-fabricated components for field assembly.
2. Material for Channel, Fittings, and Accessories: Stainless steel, Type 316.

C. Hot-dipped Galvanized Steel Channel:

1. Standard: Comply with MFMA-4 factory-fabricated components for field assembly.
2. Material for Channel, Fittings, and Accessories: Hot-dipped galvanized steel.

D. Nonmetallic Channel:

1. Standard: Comply with MFMA-4 factory-fabricated components for field assembly.
2. Channel Material: Ultraviolet resistant FRP.
3. Fittings and Accessories Material: Stainless steel, Type 316 or compatible non-metallic.

E. Accessories: conduit clamps, straps, hangers, rods, backplates, anchors, nuts, washers, etc. shall match channel material as listed in the SUPPORT MATERIALS APPLICATION Article. Use of galvanized steel components is only allowed with galvanized steel channel.

F. Threaded rod: 3/8-inch minimum diameter.

G. Expansion anchors: 3/8-inch minimum diameter.

2.7 METAL CONDUITS AND FITTINGS

A. Rigid Aluminum Conduit: Comply with ANSI C80.5 and UL 6A.

B. LFMC: Sealtite®, Type UA, continuously interlocked flexible steel conduit with sunlight and chemical resistant PVC jacket and complying with UL 360.

C. FMC: Comply with UL 1; zinc-coated steel.

D. Metallic Fittings: Comply with NEMA FB 1 and UL 514B.

1. Use cast aluminum fittings with RAC.
2. Use malleable iron, three-piece screw in type with LMFC.
3. Use Myers Electric Products, Inc. or equal, grounding type for conduit hubs.

2.8 NONMETALLIC CONDUIT AND FITTINGS

A. RNC: Schedule 80 PVC based on application; comply with NEMA TC 2 and UL 651.

B. LFNC-B: Comply with UL 1660, Type B.

C. Nonmetallic Fittings:

1. RNC: Comply with NEMA TC 3; match conduit type and material.
2. LFNC: Comply with UL 514B; dust-tight, liquid-tight, chemical resistant thermoplastic/nylon construction with tapered thread hub and neoprene O-ring gasket. Push-on fittings are prohibited.

D. Solvents and Adhesives: As recommended by conduit manufacturer.

2.9 BOXES, ENCLOSURES, AND CABINETS

A. Sheet Metal Outlet and Device Boxes: Pressed steel. Comply with NEMA OS 1 and UL 514A.

B. Cast-Metal Outlet and Device Boxes: Comply with NEMA FB 1, aluminum, Type FD, with gasketed cover.

C. Nonmetallic Outlet and Device Boxes: Comply with NEMA OS 2 and UL 514C.

D. NEMA 1 and NEMA 12 Pull and Junction Boxes:

1. Material: Sheet steel, minimum 14 gauge, without knockouts.
2. Construction: flanged box, galvanized with continuous weld seams that are ground smooth.
3. Cover: Gasketed, hanged, fastened with quick connect door clamp.

E. NEMA 4X Pull and Junction Boxes:

1. Material: Type 316 stainless steel, minimum 14 gauge, without knockouts.
2. Construction: flanged box, continuous weld seams that are ground smooth.
3. Cover: Gasketed, hanged, fastened with quick connect door clamp.

F. NEMA 7/4 Pull and Junction Boxes: When Drawings classify the area for Class 1, Division 1, Group D hazardous area, cast aluminum with stainless steel bolts; Type EJB-N4 as manufactured by Crouse Hinds or equal.

G. Handholes and Boxes for Exterior Underground Cabling: Comply with details as indicated on the Drawings.

2.10 TRANSFORMER PANELBOARD ASSEMBLY

A. Manufacturers / Models:

1. Schneider Electric / Square D – Mini Power-Zone.
2. Eaton – Mini-Power Center.
3. General Electric / ABB – Servicenter Mini-Unit Substation.

B. Product Description: NEMA ST 20, transformer distribution unit with integral primary, secondary, and branch circuit breakers.

C. Primary Voltage: As indicated on Drawings.

D. Secondary Voltage: As indicated on Drawings.

E. Bus: Copper. Include copper equipment ground bar.

F. Molded Case Circuit Breakers: UL 489, plug-on type thermal magnetic trip circuit breakers, with common trip handle for poles, listed as Type SWD for lighting circuits, Class A ground fault interrupter circuit breakers where indicated. Do not use tandem circuit breakers.

G. Short circuit withstand rating: As indicated on the panel schedules.

H. Enclosure: NEMA ST 20, Type 3R, non-ventilated, painted steel, and suitable for the environment in which the transformer is installed as shown on the electrical area classification drawings. Furnish lifting eyes or brackets.

I. Mounting: Rack.

2.11 FUSES

A. Source Limitations: Obtain fuses, for use within a specific product or circuit, from single source from single manufacturer.

B. Characteristics: NEMA FU 1, current-limiting, nonrenewable cartridge fuses with voltage ratings consistent with circuit voltages.

1. Type RK-1: 250 or 600-V, zero- to 600-A rating, 200 kAIC, time delay.
2. Type RK-5: 250 or 600-V, zero- to 600-A rating, 200 kAIC, time delay.
3. Type CC: 600-V, zero- to 30-A rating, 200 kAIC, fast acting, time delay.
4. Type CD: 600-V, 31- to 60-A rating, 200 kAIC, fast acting, time delay.
5. Type J: 600-V, zero- to 600-A rating, 200 kAIC, time delay.
6. Type L: 600-V, 601- to 6000-A rating, 200 kAIC, time delay.

C. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

D. Comply with NEMA FU 1 for cartridge fuses.

E. Comply with NFPA 70.

F. Coordinate fuse ratings with utilization equipment nameplate limitations of maximum fuse size and with system short-circuit current levels.

2.12 FUSED SAFETY SWITCHES

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. General Electric, a division of ABB.
2. Eaton.
3. Square D; Schneider Electric.

B. Type HD, Heavy Duty, Three Pole, Single Throw, 600VAC. UL 98 and NEMA KS 1, horsepower rated, lockable handle with capability to accept three padlocks, and interlocked with cover in closed position.

C. Accessories:

1. Equipment Ground Kit: Internally mounted and labeled for copper and aluminum ground conductors.
2. Neutral Kit: Internally mounted; insulated, capable of being grounded and bonded; labeled for copper and aluminum neutral conductors.
3. Class R Fuse Kit: Provides rejection of other fuse types when Class R fuses are specified.
4. Lugs: Suitable for number, size, and conductor material.
5. Service-Rated Switches: Labeled for use as service equipment.

2.13 TYPE 2 SURGE PROTECTIVE DEVICES (SPDs)

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Advanced Protection Technologies Inc. (APT).
2. Eaton.
3. General Electric / ABB.
4. Schneider Electric USA, Inc.

B. Source Limitations: Obtain devices from single source from single manufacturer.

C. Standards: Listed and labeled by an NRTL acceptable to authorities having jurisdiction as complying with UL 1449, latest edition, Type 2.

D. Product Options: Include LED indicator lights for power and protection status. Lights visible without opening any cover.

E. Performance Criteria:

1. Match the voltage, phasing, and frequency of the power system.
2. SCCR equal to or exceed the equipment being protected by the SPD.
3. Protect again surges produced by a 1.2 / 50 µs and 8 / 20 µs combination waveform generator.
4. Include EMI/RFI noise filtration and comply with UL 1283.
5. Response time of one nanosecond or less for any individual component, self-restoring, and fully automatic.
6. Provide all modes of protection based on the system voltage.
7. Voltage protection ratings (VPRs) not exceeding the following:

System Voltage	Line-Neutral	Line-Ground	N-Ground	Line-Line
120 (2W+G)	700	700	700	n/a
240 (2W+G)	1200	1200	1200	n/a
120/240 (3W+G)	700	700	700	1200
120/208Y (4W+G)	700	700	700	1200
277/480Y (4W+G)	1200	1200	1200	2000
240Δ (3W+G)	n/a	1200	n/a	1200

8. Peak Surge Current Rating: Minimum single-pulse surge current withstand rating per phase must not be less than the following kA. Peak surge current rating must be arithmetic sum of the ratings of individual MOVs in a given mode.

    a. Service entrance disconnect switch(480V): 200 kA.
    b. Panelboards and control panels (480V): 200 kA.
    c. Panelboards and load centers (240/208/120V): 100 kA.

9. Inominal Rating:

    a. Switchgear, switchboards, motor control centers: 20 kA.
    b. All other equipment: 10 kA.

F. Enclosures:

1. Dry Indoor Enclosures: NEMA 250, Type 12.
2. Outdoor, Wet, Damp, Corrosive, and Process Area Enclosures: NEMA 250, Type 4X.

2.14 IDENTIFICATION

A. Factory applied insulation color for No. 8 AWG conductors and smaller. Factory applied insulation color or field applied colored electrical tape for No. 6 AWG conductors and larger:

1. Color for 208/120V Circuits:

    a. Phase A: Black.
    b. Phase B: Red.
    c. Phase C: Blue.
    d. Neutral: White.

2. Color for 240/120V Circuits (Single Phase):

    a. Phase A: Black.
    b. Phase B: Red.
    c. Neutral: White.

3. Color for 240Δ/120V Circuits (Three Phase, Four Wire, high leg, center tap):

    a. Phase A: Black.
    b. Phase B: Orange (high leg).
    c. Phase C: Blue.
    Neutral: White.

4. Color for 480/277V Circuits:

    a. Phase A: Brown.
    b. Phase B: Orange.
    c. Phase C: Yellow.
    d. Neutral: Gray.

5. Color for Equipment Grounds: Green.
6. Color of Individual Control Conductors:

    a. AC: Red.
    b. DC: Blue.

B. Nameplates and Labels:

1. Equipment Identification and Source Nameplates:

    a. Black letters on a white field.
    b. Engraved, laminated plastic, 3/16-inch-high lettering.
    c. Provide for all electrical equipment. Match Drawing designation.
    d. Include power source information, i.e., “FED FROM MCC-2” or provide separate nameplate.

2. Device Identification Labels:

    a. Black letters on a white field.
    b. Machine generated, self-adhesive, 1/4-inch-high lettering.
    c. Provide for all receptacles, wall switching, lighting fixtures, photocells, exit lights, instruments, etc.
    d. Include power source and branch circuit information, i.e., “LP-2/15” indicates panelboard LP-2, branch circuit 15.

3. Wire and Cable Labels:

    a. Black letters on a white field.
    b. Wraparound or sleeve type.

C. Detectable Underground-Line Warning Tape:

1. Foil-backed, detectable buried utility tape with black lettering on a bright background.
2. Width: 6 inches.
3. Overall Thickness: 5 mils.
4. Background Color / Description:

    a. Red / Electric: electrical power, control, or instrumentation.
    b. Orange / Fiber: fiber optic cables.

PART 3 - EXECUTION

3.1 GENERAL

A. Comply with the applicable National Electrical Contractors Association (NECA) documents for installation requirements except where requirement on Drawings or in this specification are stricter.

1. NECA 1: Standard for Good Workmanship in Electrical Construction.
2. NECA 102: Standard for Installing Aluminum Rigid Metal Conduit.
3. NECA 111: Standard for Installing Nonmetallic Raceways.
4. NECA 331: Standard for Installing Building and Service Entrance Grounding and Bonding.
5. NECA / NEMA 605: Recommended Practice for Installing Underground Nonmetallic Utility Duct.

3.2 CONDUCTOR APPLICATIONS

A. Wires and Cables: Copper, stranded, except for lighting and receptacle wiring which may be solid.

B. Wire for lighting, receptacles, and other circuits not exceeding 150 volts to ground shall be NEC type THWN-2/THHN. Below grade and underground the wire shall be type XHHW-2.

C. Wire for power circuits over 150 volts to ground shall be NEC type XHHW-2 for sizes No. 4/0 AWG and smaller, and shall be NEC type RHW-2 for sizes 250 kcmil and larger.

D. Equipment grounding conductors shall be the same NEC type as the phase conductors described previously, green and sized per NEC Table 250.122.

E. Bare copper ground wire shall be stranded, tinned soft drawn annealed copper wire.

F. Ground grid conductors shall be uninsulated unless shown otherwise on Drawings.

G. Wire for control, status, and alarm shall be NEC type THWN-2/THHN.

H. Multi-conductor control cable shall be NEC type TC (tray cable), stranded, No. 14 AWG, THHN/THWN-2 600V insulated color coded conductors, bare stranded ground wire, with overall PVC cable jacket.

3.3 CONDUCTOR INSTALLATION

A. Conceal cables in finished walls, ceilings, and floors unless otherwise indicated.

B. Complete raceway installation between conductor and cable termination points prior to pulling conductors and cables.

C. Use manufacturer-approved pulling compound or lubricant where necessary; compound used must not deteriorate conductor or insulation. Do not exceed manufacturer's recommended maximum pulling tensions and sidewall pressure values.

D. Use pulling means, including fish tape, cable, rope, and basket-weave wire/cable grips, that will not damage cables or raceway. Use of steel fish tapes and/or steel pulling cables in PVC conduit or raceways that terminate into energized enclosures is prohibited.

E. Install exposed cables parallel and perpendicular to surfaces of exposed structural members and follow surface contours where possible.

F. Adequately support cables.

G. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A-486B.

H. Make splices, terminations, and taps that are compatible with conductor material and that possess equivalent or better mechanical strength and insulation ratings than unspliced conductors. Do not splice service or feeder cables without prior written approval of Engineer. Instrumentation and Ethernet cables may not be spliced and shall be continuous from terminal to terminal.

I. Wiring at Outlets:

1. Install conductor at each outlet, with at least 6 inches (150 mm) of slack.
2. Form solid wire into loop to fit around device terminal screw. Do not overlap wire.

J. Identify and color-code conductors and cables.

K. Identify each spare conductor at each end with identity number and location of other end of conductor and identify as spare conductor.

L. Identify circuit number associated with lights, receptacles, and other miscellaneous loads to panelboards. Identify phase and neutral conductors with circuit number.

M. Install instrumentation and Ethernet cabling in separate raceway from control or power wiring.

N. Separation from EMI Sources:

1. Separation between open instrumentation cables or cables in non-metallic or non-ferrous raceways and unshielded power conductors and electrical equipment shall be as follows:

    a. Equipment or circuits rated less than 2 kVA: Minimum 5 inches.
    b. Equipment or circuits rated between 2 and 5 kVA: Minimum 12 inches.
    c. Equipment or circuits rated more than 5 kVA: Minimum 24 inches.

3.4 GROUNDING

A. Comply with NEC Article 250.

B. Install insulated green equipment grounding conductor in all power and control raceways.

C. For instrumentation wiring, ground shield at one end only as recommended by instrument manufacturer and in accordance with Owner's standard.

D. Install grounding conductors in conduit or sleeves when passing through floor slabs.

E. Use exothermic welding process for all underground connections, connections to structural steel, connections to ground rods, or other connections which will become inaccessible at project completion.

3.5 SUPPORT MATERIALS APPLICATON

A. Dry, indoor, conditioned, non-process space: Hot-dipped galvanized steel.

B. Outdoor, process areas, or areas shown on the drawings as "DUST", "DAMP", or "WET": Aluminum and/or stainless-steel channel, depending upon load requirements.

C. Areas shown on the drawings as "CORROSIVE": Nonmetallic.

3.6 RACEWAY APPLICATIONS

A. Refer to Appendix Table 260510-1 for specific raceway application requirements.

B. Minimum Raceway Size: 3/4-inch trade size.

3.7 BOX APPLICATIONS

A. All boxes shall be metallic unless specified herein or indicated on Drawings.

B. Use cast malleable iron for boxes and condulet fittings for exposed switch, receptacle, and lighting outlets.

C. Use pressed steel boxes for concealed switch, receptacles, and lighting outlets.

D. Pull boxes, junction boxes, cabinets, etc. shall be suitable for the location and conform to the NEMA enclosure rating and material descriptions as indicated on Drawings.

E. Where no size is indicated for junction boxes, pull boxes, or terminal cabinets, size in accordance with NEC Article 314.

3.8 RACEWAY INSTALLATIONS

A. Complete raceway installation before starting conductor installation.

B. Tightly plug ends of conduits during construction to exclude dust and moisture.

C. Arrange stub-ups so curved portions of bends are not visible above finished slab.

D. Arrange conduit system to allow liquids such as water, condensation, etc. will drain away from equipment served. If conduit drainage is not possible, plug conduits using conduit seals.

E. Install no more than the equivalent of three 90-degree bends in any conduit run. Support within 12 inches of changes in direction.

F. Make bends in raceway using large-radius preformed ells. Field bending shall be according to NFPA 70 minimum radii requirements. Use only equipment specifically designed for material and size involved.

G. Support conduit within 12 inches of enclosures to which attached.

H. Threaded Conduit Joints, Exposed to Wet, Damp, Corrosive, or Outdoor Conditions: Apply listed compound to threads of raceway and fittings before making up joints. Follow compound manufacturer's written instructions.

I. Raceway Terminations at Locations Subject to Moisture or Vibration: Use insulating bushings to protect conductors including conductors smaller than No. 4 AWG.

J. Terminate threaded conduits into threaded hubs or with locknuts on inside and outside of boxes or cabinets. Install bushings on conduits up to 1-1/4-inch trade size and insulated throat metal bushings on 1-1/2-inch trade size and larger conduits terminated with locknuts. Install insulated throat metal grounding bushings on service conduits. Install Meyers grounding type hubs when conduits terminate at gasketed enclosures.

K. Install raceways square to the enclosure and terminate at enclosures with locknuts. Install locknuts hand tight plus 1/4 turn more.

L. Do not rely on locknuts to penetrate nonconductive coatings on enclosures. Remove coatings in the locknut area prior to assembling conduit to enclosure to assure a continuous ground path.

M. Cut conduit perpendicular to the length. For conduits 2-inch trade size and larger, use roll cutter or a guide to make cut straight and perpendicular to the length.

N. Install pull wires in empty raceways. Use polypropylene or monofilament plastic line with not less than 200-lb tensile strength. Leave at least 12 inches of slack at each end of pull wire. Cap underground raceways designated as spare above grade alongside raceways in use.

O. Install raceway sealing fittings at accessible locations according to NFPA 70 and fill them with listed sealing compound. For concealed raceways, install each fitting in a flush steel box with a blank cover plate having a finish similar to that of adjacent plates or surfaces. Install raceway sealing fittings according to NFPA 70.

P. Install devices to seal raceway interiors at accessible locations. Locate seals so no fittings or boxes are between the seal and the following changes of environments. Seal the interior of all raceways using “Duxseal” or seal fitting at the following points:

1. Where conduits pass from warm to cold locations, such as boundaries of refrigerated spaces.
2. Where an underground service raceway enters a building or structure.
3. Conduit extending from interior to exterior of building.
4. Conduit extending into pressurized duct and equipment.
5. Conduit extending into pressurized zones that are automatically controlled to maintain different pressure set points.
6. Where otherwise required by NFPA 70.

Q. Comply with manufacturer's written instructions for solvent welding RNC and fittings.

R. Install expansion joint fittings where necessary to compensate for thermal expansion and contraction.

S. Flexible Conduit Connections: Comply with NEMA RV 3. Use a maximum of 72 inches of flexible conduit for equipment subject to vibration, noise transmission or movement; and for transformers and motors.

T. Mount boxes at heights indicated on Drawings. If mounting heights of boxes are not individually indicated, give priority to ADA requirements. Install boxes with height measured to center of box unless otherwise indicated.

U. A maximum continuous run of conduit shall not exceed 300 feet and shall be reduced by 75 feet for each 90-degree elbow.

V. Provide a 4-inch concrete housekeeping pad at all slab and grade penetrations. Provide a 45 degree, 3/4-inch chamfer at all exposed edges.

W. Protect metallic finish conduit installed in contact with concrete or below grade with two coats of bitumastic paint, heat shrink tubing, or approved equivalent. Extend protection on riser conduits from 12 inches below slab to 6 inches above slab.

X. In hazardous locations, seal conduits terminating at boxes enclosing circuit opening equipment at the entrance to the enclosure with approved compound filled sealing fittings to prevent passage of explosive or combustible gases through the conduits. Similarly seal all conduits leading from or entering hazardous locations at points of exit or entrance. Seal exposed conduits

passing through hazardous locations at both the entrance to and the exit from the hazardous locations.

Y. Install conduit sealing and drain fittings in all hazardous (classified) areas designated Class 1, Division 1, and Class 1, Division 2.

3.9 UNDERGROUND SYSTEM INSTALLATION

A. Coordinate final arrangement with other underground utilities, site grading, and surface features.

B. Comply with Division 31 specifications for earthwork, excavation, trenching, backfill, and compaction.

C. Raceway Drainage:

1. Drain away from buildings.
2. Drain towards manholes or handholes.
3. Slope raceway not less than 3-inches per 100 feet.

D. Restoration: Restore surface features and re-establish grade, paving, and vegetation to original unless otherwise indicated.

E. Separate underground copper signal conduits (instrumentation and telecommunication) from power conduits by a minimum of 12 inches unless noted otherwise. Keep crossing of these conduits to a minimum; cross at 90-degree angles.

F. Transition to Metal Conduit:

1. Use fittings manufactured for RNC to metal conduit transition.
2. Make transition from underground duct to metal conduit at least 10 feet outside the building wall, without reducing duct line slope away from building and without forming a trap in the line.

G. Minimum Cover and Additional Detail: As indicated per details on Drawings.

H. Underground-Line Warning Tape: Bury underground line above all concrete-encased duct and direct buried conduits (ducts). Align tape parallel to and within 3 inches of centerline of duct bank. Provide an additional warning tape for each 12-inch increment of duct bank width over a nominal 18 inches. Space additional tapes 12 inches apart, horizontally.

I. Where Drawings call for concrete encased duct bank, color concrete red.

3.10 ELECTRICAL PENETRATIONS

A. Provide and place all sleeves for conduits penetrating floors, walls, partitions, etc.

B. Locate all slots and concealed conduits and stub-ups for electrical work and place and form as required before concrete is poured.

C. Make weathertight and restore finishes on exterior penetrations.

D. Use conduit wall seals where underground conduits penetrate walls or at other locations indicated on Drawings.

E. Seal openings where conduits pass through walls or floors to prevent passage of flame and smoke. Maintain fire rating of walls.

F. Patch and paint interior wall penetrations to match original.

3.11 TRANSFORMER PANELBOARD ASSEMBLY INSTALLATION

A. Mount transformer panelboard assembly plumb and level.

B. Use flexible conduit, 2 feet (600 mm) minimum length, for connections to unit case. Make conduit connections to side panel of enclosure.

C. Maximum Height: 6 feet (1800 mm) to top of transformer panelboard assembly.

D. Provide typed circuit directory for each branch circuit load center. Revise directory to reflect circuiting changes required to balance phase loads.

3.12 FUSE INSTALLATION

A. Examine fuses before installation. Reject fuses that are moisture damaged or physically damaged.

B. Examine holders to receive fuses for compliance with installation tolerances and other conditions affecting performance, such as rejection features.

C. Examine utilization equipment nameplates and installation instructions. Install fuses of sizes and with characteristics appropriate for each piece of equipment.

D. Evaluate ambient temperatures to determine if fuse rating adjustment factors must be applied to fuse ratings.

E. Proceed with installation only after unsatisfactory conditions have been corrected.

F. Cartridge Fuses:

1. Fused Disconnect Switches: Class RK5, time delay.
2. Power Electronics Circuits: Class J, high speed.
3. Control Transformer Circuits: Class CC, time delay, control transformer duty.
4. Provide open-fuse indicator fuses or fuse covers with open fuse indication.

G. Install fuses in fusible devices. Arrange fuses so rating information is readable without removing fuse.

H. Indicate fuse replacement information inside of door of each fused switch and adjacent to each fuse block, socket, and holder.

3.13 IDENTIFICATION INSTALLATION

A. Self-Adhesive Identification Products: Before applying identification product, prepare and clean attachment surface with manufacturer recommended product to allow for effective bond.

B. Verify and coordinate identification names and other features.

C. Nameplate Attachment:

1. Screw mounted for NEMA 1 enclosures.
2. Epoxy or similar waterproof adhesive for all other enclosure types.

D. Install identification and power source nameplates for electrical equipment. Refer to Part 2 “Identification” Article for requirements.

E. Install circuit identification labels for cables and conductors at each termination location and within pull boxes and handholes. Refer to PART 2 “Identification” Article for color code and additional requirements.

F. Install device identification labels for receptacles, light switches, etc. Refer to Part 2 “Identification” Article for requirements.

G. Install underground warning tape during backfilling of trenches for underground conduits and duct banks in accordance with details on Drawings.

H. Panelboard Identification:

1. Provide equipment and power source nameplates as previously described.
2. Label branch circuit phase and neutral wires with associated pole number.
3. Install typed as built circuit directory giving location and nature of load served.

3.14 FIELD QUALITY CONTROL

A. Perform the following tests and inspections for conductors and cables.

1. Visually inspect for correct installation.
2. Perform continuity test.
3. Perform insulation-resistance test for power and control conductors in accordance with NETA standards.
4. Verify uniform resistance of parallel conductors.

B. Cable will be considered defective if it does not pass tests and inspections.

C. Conduct fall-of-potential grounding electrode system test in accordance with IEEE 81.

D. Perform transformer inspections and tests listed in NETA ATS, Section 7.2.1.1.

E. Perform circuit breaker inspections and tests listed in NETA ATS, Section 7.6.1.1.

F. Prepare test and inspection reports.

3.15 CLEANING / PROTECTION

A. Protect coatings, finishes, and cabinets from damage and deterioration. Repair damage as recommended by manufacturer.

B. Measure primary and secondary voltages and make appropriate tap adjustments.

C. Remove all rubbish and construction debris from inside electrical equipment and enclosures.

3.16 APPENDICES

A. Table 260510-1: Raceway Application Guidelines

Table 260510-1
Raceway Application Guidelines

Raceway Type	Location / Application
Aluminum Rigid Conduit (ARC)	All indoor and outdoor applications, except where other types are listed. All exposed, non-corrosive areas. All concealed, non-corrosive areas. Under slabs in slab on grade construction. Stub-ups through slabs. Use LFMC for flexible connections. When installed underground or in contact with concrete, paint with two coats of bitumastic paint.
PVC Schedule 40	Concrete encased duct banks. Embedded in concrete slabs or structures. Use ARC elbows.
PVC Schedule 80	Direct buried. Corrosive areas. Protection of grounding electrode conductors. Protection of lightning conductors. Where exposed, use LFNC for flexible connections. Use ARC elbows for underground applications.

END OF SECTION 260510

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SECTION 260573 - POWER SYSTEM STUDIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes a computer-based study for:

1. Short circuit report.
2. Protective device coordination report.
3. Motor starting report.
4. Arc flash report.

B. Study encompasses the power distribution system of Seminole Lift Station for the City of Titusville, Florida. Facility is located at 1301 Riverside Dr, Titusville, Florida.

C. Study includes the electric utility company's protective devices, service entrance equipment and distribution to submersible pumps. All power distribution to that point whether existing or new is included. Equipment included, but not limited to:

1. Main fused disconnect switch.
2. Automatic transfer switch.
3. Generator circuit breaker.
4. Pump control panel.
5. Transformer panel assembly.

D. The local electric utility is Florida Power and Light. FPL contact is Joel Beltran, telephone 321-455-6111, email Joel.Beltran@fpl.com.

E. Obtain all data necessary to perform the study. Data included, but not limited to:

1. Up to date one-line diagrams.
2. Equipment data.
3. Cable sizes and lengths.
4. Existing protective device settings.
5. Electric utility information: available fault current, protective device equipment information and settings, X/R ratios, transformer impedances and ratings.

1.3 DEFINITIONS

A. Boundary, Arc Flash: When an arc flash hazard exists, an approach limit from an arc source at which the incident energy equals 1.2 cal/cm² (5 J/cm²).

B. Boundary, Limited Approach: An approach limit at a distance from an exposed energized electrical conductor or circuit part within which a shock hazard exists.

C. Boundary, Restricted Approach: An approach limit at a distance from an exposed energized electrical conductor or circuit part within which there is an increased likelihood of electric shock, due to electrical arc-over combined with inadvertent movement.

D. Existing to Remain: Existing items of construction that are not to be removed and that are not otherwise indicated to be removed and salvaged or removed and reinstalled. Existing to remain items shall remain functional throughout the construction period.

E. Field Adjusting Agency: An independent electrical testing agency with full-time employees and the capability to adjust devices and conduct testing indicated and that is a member company of NETA.

F. One-Line Diagram: A diagram that shows, by means of single lines and graphic symbols, the course of an electric circuit or system of circuits and the component devices or parts used therein.

G. Power System Analysis Software Developer: An entity that commercially develops, maintains, and distributes computer software used for power system studies.

H. Power Systems Analysis Specialist: Professional engineer in charge of performing the study and documenting recommendations, licensed in the state where Project is located.

I. Preliminary Short Circuit Report: Report that includes the maximum available utility fault current, proposed equipment, and existing equipment to determine if new equipment may be released for manufacturing and existing equipment is adequate for the calculated short circuit levels.

J. Protective Device: A device that senses when an abnormal condition or current flow exists and then removes the affected portion of the circuit from the system.

K. SCCR: Short-circuit current rating.

L. Service: The conductors and equipment for delivering electric energy from the serving utility to the wiring system of the premises served.

M. Single-Line Diagram: See "One-Line Diagram."

N. Supplier: The person, firm or corporation identified as such to provide the power system study and means the Supplier or its authorized agent. See also Power Systems Analysis Specialist.

1.4 ACTION SUBMITTALS

A. Supplier qualifications per Quality Assurance paragraph. Submit prior to starting study. Include the following:

1. Brief description of each qualifying study.

2. Name of owner of installation on which study was performed with address, telephone number, and contact person.
3. Date of study.
4. Any other information indicating the firm's experiences and ability to perform the work and business status.

B. Final Power System Study Report. Report must be approved prior to energization of new major electrical equipment. Revise study as required for changes during construction.

1.5 CLOSEOUT SUBMITTALS

A. Final power system study updated with any changes made after equipment start-up.

1.6 QUALITY ASSURANCE

A. Perform Study using commercially developed and distributed software designed specifically for power system analysis.

B. Software algorithms shall comply with requirements of standards and guides specified in this Section.

C. Manual calculations are unacceptable.

D. Power System Analysis Software Qualifications:

1. Design computer program to perform short-circuit studies or have a function, component, or add-on module designed to perform short-circuit studies.
2. Develop computer program under the charge of a licensed professional engineer who holds IEEE Computer Society's Certified Software Development Professional certification.
3. Complies with IEEE 399, IEEE 141, IEEE 242, IEEE 519, IEEE 1015, and IEEE 1584 as applicable to the project scope.

E. Power Systems Analysis Specialist Qualifications: Professional engineer licensed in the state where Project is located and has regularly engaged in this electrical engineering study specialty for minimum of five years and has performed at least three projects of similar complexity to this project within the last three years. Perform all elements of the study under the direct supervision and control of this professional engineer.

F. Power System Study Certification: Report shall be signed and sealed by Power Systems Analysis Specialist.

G. Field Adjusting Agency Qualifications:

1. Employer of a NETA ETT-Certified Technician Level III or NICET Electrical Power Testing Level III certification responsible for all field adjusting of the Work.
2. A member company of NETA.
3. Acceptable to authorities having jurisdiction.

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PART 2 - PRODUCTS

2.1 POWER SYSTEM ANALYSIS SOFTWARE DEVELOPERS

A. Acceptable Software:

1. SKM System Analysis, Inc.: Power*Tools.
2. Operation Technology, Inc.: ETAP (Electrical Transient Analyzer Program).
3. EasyPower, Inc.: EasyPower.
4. Or equal.

2.2 POWER SYSTEM STUDY REPORT GENERAL REQUIREMENTS

A. Except for one-line diagrams, standard 8 1/2-inch by 11-inch pages, with total pages numbered.

B. Electronic PDF format copy with electronic bookmarks for each section.

C. Signed and sealed by a professional engineer registered in the state in which the project is located.

D. Organized in the following order:

1. Executive Summary.
2. Short Circuit Analysis.
3. Short Circuit Computer Printout.
4. Protective Device Coordination.
5. Motor Starting.
6. Arc Flash Hazard Analysis.
7. Utility Data.
8. Modeled One Line Diagrams.

E. Information on one-line diagrams, legible when printed at 11-inch by 17-inch. Show the following:

1. Protective device designations and ampere ratings.
2. Conductor types, sizes, and lengths.
3. Transformer kilovolt ampere (kVA), impedance, and voltage ratings.
4. Motor and generator designations and kVA ratings.
5. Switchgear, switchboard, motor-control center, and panelboard designations and ratings.
6. Derating factors and environmental conditions.
7. Any revisions to electrical equipment required by study.

F. Identifiers between the one-line diagram, short circuit study, coordination study, and arc flash study to be the same.

G. Include copies of correspondence with electric utility under utility data section of report. Correspondence to include names and contact information.

2.3 EXECUTIVE SUMMARY

A. Include summary of distribution system, information received from electric utility, major assumptions, adequacy of equipment to safely clear or close on any fault, identify problem areas and recommendations for resolving problem areas.

2.4 SHORT CIRCUIT

A. Comply with IEEE 399 and IEEE 551 (new 3002 series).

B. Include normal utility powered configuration, on-site generation configuration, and alternate modes of operation (i.e. alternate utility configuration, bus ties closed).

C. Include minimum and maximum possible fault conditions. Address three-phase bolted as well as ground fault conditions.

D. Consider the fault contribution of all motors operating during the maximum demand condition of the motors.

E. Calculate short-circuit momentary duties and interrupting duties based on an assumed bolted three-phase short circuit at each high and medium voltage switchgear bus and controller, low voltage switchgear bus, switchboard, motor control center, distribution panelboard, pertinent branch circuit panelboard and other significant locations throughout the systems. Include the X/R ratios, asymmetry factors, KVA and symmetrical fault-current in the short circuit tabulations. Provide a ground fault current study for the same system areas. Include in tabulations fault impedance, X/R ratios, asymmetry factors, motor contribution, short circuit KVA, and symmetrical and asymmetrical fault-currents.

F. Include representation of the site power system, the base quantities selected, impedance source data, calculation methods and tabulations, one-line diagrams, conclusions, and recommendations.

G. Identify available fault current at each bus and evaluate system elements including but not limited to equipment, protective devices, and cables.

H. Base current transformers' ratio and burden calculations on a 10 percent maximum ratio error per IEEE C57.13. Identify current transformers that will not allow the protective devices to operate within acceptable IEEE error margins and recommend corrective action.

I. List momentary, interrupting, and/or withstand rating of all key elements of the distribution system along with the maximum available fault current in tabular form and clearly indicate the adequacy of the element with PASS / FAIL designation.

J. Short Circuit Computer Printout:

1. Calculations shall be in sufficient detail for easy review.
2. Back up calculations shall become part of the final report.

2.5 PROTECTIVE DEVICE COORDINATION

A. Comply with IEEE 242 (new 3004 series).

B. Utilize results from the short circuit study and balance the competing objectives of protection and continuity of service for the system specified, considering the basic factors of sensitivity, selectivity and speed.

C. Show graphic indication of coordination between protective devices in the form of full color time-current coordination (TCC) plots with each protective device curve in a unique color for easy review.

D. Provide separate TCC plots for each mode of operation. Provide separate TCC plots for "normal" and "stand by" operation. Show maximum fault values in each case. Both power sources shown on one plot is unacceptable.

E. Provide separate TCC for phase over-current and ground fault.

F. Show no more than six devices on one TCC. Of these six curves, two (the largest upstream device and the smallest downstream device) shall repeat curves shown on other coordination plots to provide cross-reference. Designate each TCC with a unique identifier and include each TCC identifier and descriptive title in the study's table of contents.

G. Include in each TCC the following as applicable:

1. TCC name and description.
2. One-line diagram.
3. Identifiers on one-line diagram and curves.
4. Significant motor starting characteristics.
5. Appropriate NEC protection points.
6. Appropriate ANSI/IEEE protection points.
7. Magnetizing inrush points of transformers.
8. Transformer damage curves.
9. Complete operating bands for low voltage circuit breaker trip devices and fuses.
10. Relay coil taps, time-dial settings, and pickup settings.
11. Significant symmetrical and asymmetrical fault currents.
12. Power cable withstand curves.
13. Generator short circuit decrement and thermal limit curves.

H. Terminate device characteristic curve on TCC at a point reflecting the maximum symmetrical or asymmetrical fault current to which that device is exposed, based on the short circuit study.

I. Select each primary protective device for a delta-to-wye-connected transformer so the characteristic or operating band is within the transformer parameters; where feasible, include a parameter equivalent to 58 percent of the ANSI C37.91 withstand curve to afford protection for secondary line-to-ground faults.

J. Separate low voltage power circuit breakers from each other and the associated primary protective device, by a 16 percent current margin for coordination and protection in the event of line-to-line faults.

K. Separate protective relays by a 0.3-second time margin for the maximum 3 phase fault conditions to assure proper selectivity.

L. Optimize settings for breakers and relays to provide the most effective protection practicable for all modes and power sources.

M. Include at least all devices down to largest branch circuit and largest feeder circuit breaker in each motor control center and/or power distribution panelboard. Include all adjustable setting ground fault protective devices.

N. Provide tabulations of recommended settings for all protective devices. Where devices are existing, highlight any changes from the existing setting to the proposed recommended setting.

O. Provide all information required to program/set multifunction solid state relays.

2.6 MOTOR STARTING

A. Comply with IEEE 141 (new IEEE 3001 series) for recommended light flicker limits and IEEE 3002.7 for motor starting studies.

B. Provide motor starting study for all large electric drives (100 horsepower and larger). Include all operating modes.

C. Identify any concerns about voltage drop or power inrush limitations due to the starting of motors.

2.7 ARC FLASH HAZARD

A. Comply with IEEE 1584, NFPA 70, and NFPA 70E as applicable.

B. Utilize short circuit and protective device coordination results to provide arc flash hazard analysis. Perform calculations in accordance with IEEE 1584 or NFPA 70E with the method identified within the report.

C. Calculate the incident energy levels at each faulted bus for each mode of operation and for both maximum and minimum fault currents.

D. Include calculations at line side and load side of main breakers, where applicable.

E. Provide tabular report for all modes and conditions and include “worst case” summary. Use the “worst case” to generate the arc flash labels. Include:

1. Fault location.
2. Arcing fault magnitude.
3. Protective device clearing time.

4. Duration of the arc.
5. Arc flash boundary.
6. Working distance.
7. Incident energy.
8. Electrode configuration.

F. Highlight any available incident energy over 40 cal/cm² and provide recommendations to mitigate the hazard.

G. Arc Flash Labels:

1. Machine printed, 4-inch by 4-inch (nominal), thermal transfer, high adhesion polyester.
2. Provide UV resistant laminate for outdoor labels.

H. Arc Flash Label Information:

1. Equipment name.
2. Identifier LINE or LOAD where equipment has potential different energy levels.
3. Arc flash hazard information: arc flash boundary and incident energy in cal/cm².
4. Shock hazard information: limited approach and restricted approach boundaries.
5. Personal Protective Equipment (PPE) requirements.
6. Study Supplier, project number, and date.

I. Provide arc flash label sample with report.

J. Do not be print the labels until equipment is energized and protective devices set according to the approved final protective device coordination study.

PART 3 - EXECUTION

3.1 POWER SYSTEM DATA

A. Obtain all data necessary for conduct of the study.

1. Verify completeness of data supplied on one-line diagram. Call any discrepancies to Engineer's attention.
2. For equipment included as Work of this Project, use characteristics submitted under provisions of action submittals and information submittals for this Project.
3. For equipment that is existing to remain, obtain required electrical distribution system data by field investigation and surveys conducted by qualified technicians and engineers. Qualifications of technicians and engineers shall be as defined by NFPA 70E.

B. Gather and tabulate the required input data to support the power system study.

C. Field data gathering for existing systems shall be under direct supervision and control of the engineer in charge of performing the study and shall be by the engineer or its representative who holds NETA ETT-Certified Technician Level III or NICET Electrical Power Testing Level III certification.

D. Data included, but are not limited to, the following:

1. Product data for overcurrent protective devices and existing settings.
2. Electrical power utility information. Information required may include:

    a. Available minimum and maximum three-phase fault current and X/R ratio.
    b. Available minimum and maximum single-line-to-ground fault current and X/R ratio.
    c. Service transformer voltage, kVA, and impedance ratings, winding configuration, and grounding method.
    d. Upstream protective device data.

3. Power sources and ties.
4. For switchgear, switchboards, panelboards, and motor control centers, ampacity and SCCR in amperes RMS symmetrical.
5. For transformers, kVA, primary and secondary voltages, connection type, impedance, X/R ratio, taps measured in percent, and phase shift.
6. For reactors, manufacturer and model designation, voltage rating, and impedance.
7. For circuit breakers, trip units, and fuses, manufacturer, and model designation. List type of breaker, type of trip, SCCR, current rating, and breaker settings.
8. For generators, short-circuit current contribution data, including short-circuit reactance, rated kVA, rated voltage, and X/R ratio.
9. For busways, manufacturer and model designation, current rating, impedance, lengths, and conductor material.
10. For motors, horsepower and NEMA MG 1 code letter designation.
11. Conductor sizes, lengths, number, conductor material, shield parameters for medium voltage cable, and conduit material (magnetic or nonmagnetic).
12. For relays, manufacturer and model designation, current transformer ratios, potential transformer ratios, and relay settings.
13. For transfer switches, withstand and closing ratings (WCR) with time duration.
14. Derating factors.

3.2 FIELD QUALITY CONTROL

A. Do all testing and adjustment prior to the energization of new equipment.

B. Test existing adjustable protective devices in accordance with NETA MTS.

C. Test new adjustable protective devices in accordance with NETA ATS.

D. Adjust existing and new protective devices according to approved coordination study.

E. Testing and adjusting shall be by a full-time employee of the Field Adjusting Agency, who holds NETA ETT-Certified Technician Level III or NICET Electrical Power Testing Level III certification.

F. After successful testing and adjustment, install calibration sticker with Field Adjusting Agency name, employee initials, and date of calibration at each relay or protective device.

G. After energization, minor adjustments to settings may be required to commission the equipment.

H. Submit field report and list any changes made during field adjustment or commissioning for update for record submittal of study.

3.3 ARC FLASH LABELING

A. After the field adjustment of relays and protective devices, apply arc flash study labels.

B. Apply arc flash labels on the front covers of the following equipment:

1. Disconnect switches.
2. Transfer switches.
3. Generator circuit breaker.
4. 480V control panels.
5. Transformer panel assemblies

C. Install LINE and LOAD arc-flash labels as applicable.

END OF SECTION 260573

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SECTION 262505 – 480V CONTROL PANELS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes industrial control panels with the following features:

1. Enclosure.
2. Mechanically interlocked main and generator circuit breakers.
3. Generator receptacle.
4. Motor controllers.
5. Control and monitoring devices.
6. Accessories.
7. Identification.

1.3 DEFINITIONS

A. CPT: Control power transformer.

B. GFCI: Ground-fault circuit interrupter.

C. MCCB: Molded-case circuit breaker.

D. MCP: Motor circuit protector.

E. NEC: National Electrical Code.

F. RVSS: Reduced voltage soft start.

G. SCCR: Short-circuit current rating.

H. SPD: Surge protective device.

I. UL: Underwriter’s Laboratories.

1.4 ACTION SUBMITTALS

A. Product Data: For each control panel.

1. Include materials, switching and overcurrent protective devices, SPDs, accessories, and components indicated.
2. Include dimensions and manufacturers' technical data on features, performance, electrical characteristics, ratings, and finishes.

B. Shop Drawings: For each control panel.

1. Include dimensioned plans, elevations, sections, and details.
2. Bill of materials with part numbers, cross-referenced to plans.
3. Nameplate schedule.
4. Conduit entrance locations and mounting details.
5. Power and control schematics.
6. Certification for compliance with UL 508A.
7. Identification per NEC 409.110.

1.5 INFORMATIONAL SUBMITTALS

A. Startup reports.

1.6 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data:

1. Include the following if applicable:

a. Manufacturer's written instructions for testing and adjusting thermal-magnetic circuit breaker and motor-circuit protector trip settings.
b. Manufacturer's written instructions for setting field-adjustable overload relays.
c. Manufacturer's written instructions for testing, adjusting, and reprogramming microprocessor control modules.
d. Manufacturer's written instructions for setting field-adjustable timers, controls, and status and alarm points.
e. Load-Current and Overload-Relay Heater List: Compile after motors have been installed and arrange to demonstrate that selection of heaters suits actual motor nameplate, full-load currents.
f. Load-Current and List of Settings of Adjustable Overload Relays: Compile after motors have been installed and arrange to demonstrate that switch settings for motor-running overload protection suit actual motors to be protected.

1.7 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Control fuses: Equal to 10 percent of total quantity installed for each size and type, but no fewer than two of each size and type.

2. Power fuses: Equal to 10 percent of total quantity installed for each size and type, but no fewer than three of each size and type.
3. Corrosion Inhibitor: Equal to 100 percent of total number of control panels. (One spare per panel.)

1.8 DELIVERY, STORAGE, AND HANDLING

A. Store control panels indoors in clean, dry space with uniform temperature to prevent condensation. Protect control panels from exposure to dirt, fumes, water, corrosive substances, and physical damage.

1.9 FIELD CONDITIONS

A. Ambient Environment Ratings: Rate equipment for continuous operation under the following conditions unless otherwise indicated:

1. Ambient Temperature: Not less than 23-degrees F and not exceeding 104-degrees F.
2. Altitude: Not exceeding 6600 feet for electromagnetic and manual devices.

PART 2 - PRODUCTS

2.1 GENERAL REQUIREMENTS

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by qualified testing agency, and marked for intended location and application.

B. Comply with NEMA 250: Enclosures for Electrical Equipment (1000 Volts Maximum).

C. Comply with NEMA ICS 6: Industrial Control and Systems: Enclosures.

D. Comply with UL 1203 for control panels located in hazardous (classified) locations.

E. Comply with NFPA 70.

F. Comply with UL 508A.

G. Complete and fully functional control to manually or automatically operate the control system as specified herein and as shown on Drawings. All control devices, unless specified otherwise, mounted in the Control Panel.

H. The control panel shall operate on a power supply of 480 volts, 3-phase, 60 hertz unless otherwise noted.

I. Control panel consists of a mechanically interlocked main and generator circuit breaker, motor circuit protector (MCP) and RVSS for each motor, and a 120-volt control power transformer (fused on primary and secondary) along with other devices specified. Mount all control components in one common enclosure.

J. Operation of motors will be manually or automatically. Stager control of multiple motors to prevent simultaneous motor starting.

K. SCCR: 42kA.

2.2 ENCLOSURES

A. Enclosures: NEMA 4X, Type 304 stainless steel, minimum 14 gauge.

B. Construction: The door shall be mounted via continuous stainless steel hinged and provided with pad-lockable vault type 3-point latch. The enclosure shall be equipped with an internal aluminum dead-front hinged door and shall incorporate removable back panel on which control components shall be mounted. Back panel tapped to accept mounting screws. Do not use self-tapping screws to mount components. Back panel shall be secured to enclosure with collar studs. Door(s) shall be interlocked with main circuit breaker and provided with pad-locking provision.

C. Outdoor enclosures shall be provided with sun shields. Install sun shields on fronts, sides, and tops of enclosures subject to direct and extended sun exposure.

D. Provide additional temperature control if required to meet UL temperature rating of internal components. If forced air ventilation is required, the enclosure shall be pressurized. Air filters shall be of commercially available types and sizes.

E. All controls and instruments shall be clearly labeled to indicate function. All exterior mounted equipment shall be NEMA 4X.

F. Print storage pockets shall be provided on the inside of each panel. Pocket shall be of sufficient size as required to hold all prints necessary to service the equipment.

2.3 COMPONENTS

A. Main Breaker: Thermal-magnetic air circuit breaker, Schneider Electric/Square D PowerPact Type BG (200 amp frame, 42kAIC) or equal.

B. MCP: Molded case motor circuit protector with adjustable magnetic trip only, Schneider Electric/Square D “Mag-Gard” or equal.

C. Motor Controller:

1. Solid state overloads with Class 10 tripping for submersible motors.
2. Reduced voltage motor starting: RVSS.

D. Overload relays shall be self-powered solid-state type and provide the following features: tamper guard over trip adjustment setting, ambient insensitive, harmonic immunity, phase loss and phase unbalance protection, manual reset, and push-to-test.

E. Accessible items at dead front door: Overload reset buttons, control switches, pilot devices, ETM’s, circuit breakers, convenience receptacle.

F. Normally open and normally closed auxiliary motor overload contacts wired to terminal blocks shall be provided for each motor starter within the control panel.

G. SPD: The control panel shall be provided with a surge protective device (SPD) in compliance with Section 260510. SPD shall be mounted within the control panel enclosure. Lead lengths shall not be longer than 12 inches from the main circuit breaker.

H. Control Power Transformer: 480-120V CPT, fused on primary and secondary sides, capacity as required.

2.4 CONTROL DEVICES AND ACCESSORIES

A. Control Operators and Indictors:

1. Heavy duty type, full size (30.5mm), NEMA 4X or 7 as required.
2. Each motor shall include Hand-Off-Auto selector switches to permit override of automatic control and manual actuation of shutdown.

B. Indicating Lights:

1. LED, full size (30.5mm), full voltage and push-to-test type.
2. Indicators shall be provided for individual motor run and an indicator for each failure condition.

C. Elapsed Time Meters (ETM):

1. Six (6) digit, non-reset elapsed time meter to indicate the total running time of each motor in "hours" and "tenth of hours". Series T50 as manufactured by the ENM Company or equal.
2. Provide an ETM for each motor.

D. Failure Alarm Horn and Beacon Light:

1. Alarm horn: weatherproof rated with gasket (Federal Signal Corporation, Cat. #350 or equal) for NEMA 4X applications.
2. Alarm beacon: Red lens and solid-state flasher (Ingam Products Inc. LRX-40 or equal) for NEMA 4X applications.
3. All lift station pump control panels shall include alarm horn and light for summary alarm condition.
4. Silence and reset pushbuttons shall also be furnished. A common failure reset pushbutton shall be provided to reset the alarm conditions (reset shall occur only if fault condition has been cleared).

E. Relays:

1. Control relays shall be 10 amp rated contacts (minimum), 11 pin with mounting base, 3PDT (minimum), with LED indicators to show relay status, relays shall be manufactured by Potter Brumfield or equal.
2. Timing relays shall be solid state, with pin (octal) and bases, relays shall be T-series as manufactured by Diversified Electronics Inc. or equal.

3. Intrinsically safe relays shall be solid state type with 5 amp output contacts, suitable for use on 120 volt, 60 hertz power supply and shall be Factory Mutual approved for devices in Class 1, Division 1 hazardous atmospheres. Intrinsically safe relays shall be Gems Solid State Safe-Pak as manufactured by Gems Sensors, Division of Transamerica Delaval, Inc. or equal.

F. A duplex GFCI utility receptacle (circuit breaker protected) providing 120 volts, 60 Hertz, single phase current shall be mounted on the side of the enclosure.

G. Auxiliary contacts shall be provided for remote run indication and indication of each status and alarm condition. Additional controls shall be provided as specified herein and as required by Divisions 40, 26 and as shown on Drawings.

H. Alternators shall be provided to sequence lead/lag motors, alternators shall be 008-120-13SP or 009-120-23AP as manufactured by Sta-con, or equal.

I. A phase monitor shall be provided for the control panel, monitors shall be model SUA-440-ASA as manufactured by Diversified Electronics Inc., or equal.

J. Corrosion Inhibitor Emitter: Inclusion of an industrial corrosion inhibitor emitter, selected by the manufacturer, to protect internal components of control panel from corrosion for up to one year.

K. Breather assemblies, to maintain interior pressure and release condensation in enclosures installed outdoors or in unconditioned interior spaces subject to humidity and temperature swings.

2.5 WIRING

A. Power and control wire shall be 600 Volt class, Type MTW insulated stranded copper and shall be of the sizes required for the current to be carried, but not smaller than No. 14 AWG. All wiring shall be enclosed in PVC wire trough with slotted side openings and removable cover.

B. Wiring shall be stranded copper, minimum size #14 AWG (except for shielded instrumentation cable), with 600 Volt, 90-degree C, flame retardant, Type MTW thermoplastic insulation.

C. All interconnecting wires between panel mounted equipment and external equipment shall be terminated at numbered terminal blocks.

D. Terminal blocks shall be 600 Volt heavy duty rated, tubular clamp type. Terminal strips shall be Allen Bradley catalog #1492-CA-1 or equal.

E. A copper ground bar with sufficient terminals for all field and panel ground connections shall be provided.

F. All signal wiring entering and exiting the control panel shall be provided with surge protection. Surge protection shall be as specified in Division 40.

G. An 8-inch (minimum) clear space within the enclosure shall be provided horizontally along the entire top and bottom of the control panel. A 4-inch (minimum) clear space within the enclosure shall be provided vertically along the entire sides of the control panel. No devices, terminals, etc.

shall be installed within this space, the space shall be provided for field conduit and wiring access only.

2.6 IDENTIFICATION

A. Comply with Section 260510 “Limited Electrical for Small Projects.”

B. All control panel wiring shall be numbered at both ends with type written heat shrinkable wire markers.

C. The control diagrams and overload tables shall be laminated to the inside of the door except where door space is limited the laminated documents shall be in the print storage pocket.

D. The control panel shall be provided with nameplates identifying each component, selector switches, pilot lights, etc. Nameplates shall be permanently affixed using an epoxy process (inner door nameplates shall be fastened with stainless steel screws). Nameplates shall be laminated plastic, engraved black letters with white background.

E. All control panels shall be provided with two nameplates located on the exterior door. The first nameplate shall identify the control panel name. The second nameplate shall identify the power source.

F. Where applicable provide a nameplate which reads as follows "CAUTION - THIS PANEL CONTAINS A VOLTAGE FROM AN EXTERNAL SOURCE." Letters shall be black on a high visibility yellow background.

G. Each terminal at terminal blocks shall be individually labeled.

H. Incoming phase conductor terminals shall be clearly identified. In addition to phase colors included in Section 260510, use the following color code for control wires:

1. AC control voltage: red.
2. DC control voltage: blue.
3. External control voltage: yellow.

2.7 FACTORY TESTS

A. Inspect and test control panel for correct operation. Test each circuit for continuity, short circuits, and ground faults.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Comply with NECA 1.

B. Inspect anchorage, alignment, grounding, and clearances.

C. Compare equipment nameplate data for compliance with Drawings and Specifications.

D. Verify that electrical wiring installation complies with manufacturer's written installation requirements.

E. Motor Overload Relays: Select and set overloads on the basis of full-load current rating as shown on motor nameplate. Adjust setting value for special motors as required by NFPA 70 for motors that are high-torque, high-efficiency, and so on.

F. Identify system components, wiring, cabling, and terminals. Comply with requirements for identification specified in Section 260510 "Limited Electrical for Small Projects."

3.2 STARTUP SERVICE

A. Complete startup checks according to manufacturer’s written instructions.

B. Verify motor running protection is appropriate for actual motors installed.

C. Test control panel with all field wiring connected. Set adjustable set points and time delays for proper operation of equipment. Adjust as required.

D. Perform infrared inspection of panel interior during periods of maximum possible loading. Remove all necessary covers prior to the inspection. Comply with the recommendations of NFPA 70B, "Testing and Test Methods" Chapter, "Infrared Inspection" Article.

E. Prepare test and inspection reports.

F. Install a set of legible “as built” control panel drawings (11x17 or 8.5 x 11), in the storage pocket.

3.3 DEMONSTRATION

A. Train Owner's maintenance personnel to adjust, operate, and maintain equipment.

END OF SECTION 262505

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SECTION 263213.13 - DIESEL EMERGENCY ENGINE GENERATORS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes packaged diesel engine generators for emergency use with the following features:

1. Diesel engine.
2. Diesel fuel-oil system and subbase fuel tank.
3. Control and monitoring.
4. Generator overcurrent and fault protection.
5. Generator, exciter, and voltage regulator.
6. Weatherproof outdoor sound attenuated engine generator enclosure.
7. Vibration isolation devices.
8. Finishes.

B. Related Requirements:

1. Section 263600 "Transfer Switches" for transfer switches, including sensors and relays to initiate automatic-starting and -stopping signals for engine generators.

1.3 DEFINITIONS

A. EPS: Emergency power supply.

B. EPSS: Emergency power supply system.

C. Operational Bandwidth: The total variation, from the lowest to highest value of a parameter over the range of conditions indicated, expressed as a percentage of the nominal value of the parameter.

1.4 ACTION SUBMITTALS

A. Submit copy of this specification confirming compliance with each paragraph. Provide detailed commentary for any deviation.

B. Product Data: For each type of product:

1. Include rated capacities, operating characteristics, electrical characteristics, and furnished specialties and accessories.
2. Include thermal damage curve for generator.
3. Include time-current characteristic curves for generator protective device.
4. Include fuel consumption in gallon per hour at 0.8 power factor at 0.5, 0.75, and 1.0 times generator capacity.
5. Include generator efficiency at 0.8 power factor at 0.5, 0.75, and 1.0 times generator capacity.
6. Include airflow requirements for cooling and combustion air in cubic feet per minute at 0.8 power factor, with air-supply temperature of 95, 80, 70, and 50-degrees F. Provide Drawings indicating requirements and limitations for location of air intake and exhausts.
7. Include generator characteristics, including, but not limited to, kilowatt rating, efficiency, reactances, and short-circuit current capability.

C. Shop Drawings:

1. Include plans and elevations for engine generator and other components specified. Indicate access requirements affected by height of subbase fuel tank.
2. Include details of equipment assemblies. Indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.
3. Identify fluid drain ports and clearance requirements for proper fluid drain.
4. Design calculations for selecting vibration isolators for designing vibration isolation bases.
5. Vibration Isolation Base Details: Detail fabrication, including anchorages and attachments to structure and supported equipment. Include base weights.
6. Include diagrams for power, signal, and control wiring. Complete schematic, wiring, and interconnection diagrams showing terminal markings for EPS equipment and functional relationship between all electrical components.

1.5 INFORMATIONAL SUBMITTALS

A. Source Quality-Control Reports: Including, but not limited to, the following:

1. Report of factory test on units to be shipped for this Project, showing evidence of compliance with specified requirements.
2. Report of sound generation.
3. Report of exhaust emissions showing compliance with applicable regulations.

B. Field quality-control reports.

1.6 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For engine generators to include in emergency, operation, and maintenance manuals.

1. Include the following:

a. List of tools and replacement items recommended to be stored at Project for ready access. Include part and drawing numbers, current unit prices, and source of supply.
b. Operating instructions laminated and mounted adjacent to generator location.
c. Training plan.

1.7 QUALITY ASSURANCE

A. Installer Qualifications: An authorized representative who is trained and approved by manufacturer.

B. Testing Agency Qualifications: Accredited by NETA.

1. Testing Agency's Field Supervisor: Certified by NETA to supervise on-site testing.

1.8 REGULATORY COMPLIANCE FOR FUEL STORAGE

A. Comply with the Florida Administrative Code (FAC), Section 62-762 for above ground fuel storage systems.

B. Register fuel storage system with the Florida Department of Environmental Protection (FDEP) in accordance with FAC 62-762. Pay first annual registration fee.

C. Notify the Florida Department of Environmental Protection prior to installation in accordance with FAC 62-762.

D. Perform breach of integrity test prior to placing the fuel tank in service in accordance with FAC 62-762.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Ship equipment, material, and spare parts complete except when partial disassembly is required by transportation regulations or for protection of components.

B. Pack spare parts in containers bearing labels clearly designating contents and pieces of equipment for which intended.

C. Protect all mechanical and electrical equipment with coatings, coverings, and wraps to protect from rain, droppings of any sort, dust, dirt, mud, flood, and condensed water vapor during shipment, and while installed in place during construction. Keep protection in place until work areas are substantially free of dust and debris.

D. Energize generator space heaters during storage and construction until generator is ready to be placed into operation.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Generac Power Systems, Inc.
2. Kohler Power Systems.
3. Tradewinds Power Corp.

B. Source Limitations: Obtain packaged engine generators and auxiliary components from single source from single manufacturer.

2.2 PERFORMANCE REQUIREMENTS

A. Basis of design: Kohler Power Systems.

B. B11 Compliance: Comply with B11.19.

C. NFPA Compliance:

1. Comply with NFPA 37.
2. Comply with NFPA 70.
3. Comply with NFPA 110 requirements for Level 2 EPSS.

D. UL Compliance: Comply with UL 2200.

E. Engine Exhaust Emissions: Comply with EPA Tier requirements for stationary emergency standby diesel generators based upon generator size and applicable state and local government requirements.

A. Noise Emission: Comply with applicable state and local government requirements for maximum noise level at adjacent property boundaries due to sound emitted by engine generator, including engine, engine exhaust, engine cooling-air intake and discharge, and other components of installation. Refer to Titusville Code of Ordinances, Chapter 13 (Nuisances), Article IV (Noise). The City of Titusville's Planning and Building Department has ruled that this lift station emergency diesel generator will be exempt from Section 13-102, Table I dBA requirements of the Titusville Code of Ordinances.

B. Environmental Conditions: Engine generator system shall withstand the following environmental conditions without mechanical or electrical damage or degradation of performance capability:

1. Ambient Temperature: 41 to 104-degrees F.
2. Relative Humidity: Zero to 95 percent.
3. Altitude: Sea level to 1000 feet.

2.3 ENGINE GENERATOR ASSEMBLY DESCRIPTION

A. Factory-assembled and -tested, water-cooled engine, with brushless generator and accessories.

B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

C. EPSS Class: Engine generator shall be classified as a Class 48 according to NFPA 110.

D. Service Load: 150 kW / 187.5 kVA.

E. Power Factor: 0.8, lagging.

F. Frequency: 60 Hz.

G. Voltage: 480 V ac.

H. Phase: Three-phase, four-wire wye.

I. Governor: Electronic, Adjustable isochronous, with speed sensing.

J. Mounting Frame: Structural steel framework to maintain alignment of mounted components without depending on concrete foundation. Provide lifting attachments sized and spaced to prevent deflection of base during lifting and moving.

1. Rigging Diagram: Inscribed on metal plate permanently attached to mounting frame to indicate location and lifting capacity of each lifting attachment and engine generator center of gravity.

K. Capacities and Characteristics:

1. Power Output Ratings: Nominal ratings as indicated at 0.8 power factor excluding power required for the continued and repeated operation of the unit and auxiliaries.
2. Nameplates: For each major system component to identify manufacturer's name and address, and model and serial number of component.

L. Engine Generator Performance:

1. Steady-State Voltage Operational Bandwidth: 3 percent of rated output voltage, from no load to full load.
2. Transient Voltage Performance: Not more than 20 percent variation for 50 percent step-load increase or decrease. Voltage shall recover and remain within the steady-state operating band within three seconds.
3. Steady-State Frequency Operational Bandwidth: 0.5 percent of rated frequency, from no load to full load.
4. Steady-State Frequency Stability: When system is operating at any constant load within the rated load, there shall be no random speed variations outside the steady-state operational band and no hunting or surging of speed.

5. Transient Frequency Performance: Less than 5 percent variation for 50 percent step-load increase or decrease. Frequency shall recover and remain within the steady-state operating band within five seconds.
6. Output Waveform: At no load, harmonic content measured line to line or line to neutral shall not exceed 5 percent total and 3 percent for single harmonics. Telephone influence factor, determined according to NEMA MG 1, shall not exceed 50 percent.
7. Sustained Short-Circuit Current: For a three-phase, bolted short circuit at system output terminals, system shall supply a minimum of 250 percent of rated full-load current for not less than 10 seconds and then clear the fault automatically, without damage to generator system components.
8. Start Time: Comply with NFPA 110, Type 10 system requirements.

2.4 DIESEL ENGINE

A. Fuel: ASTM D975 diesel fuel oil, Grade 2-D S15.

B. Rated Engine Speed: 1800 rpm.

C. Lubrication System: Engine or skid mounted.

1. Filter and Strainer: Rated to remove 90 percent of particles 5 micrometers and smaller while passing full flow.
2. Thermostatic Control Valve: Control flow in system to maintain optimum oil temperature. Unit shall be capable of full flow and is designed to be fail-safe.
3. Crankcase Drain: Arranged for complete gravity drainage to an easily removable container with no disassembly and without use of pumps, siphons, special tools, or appliances.

D. Jacket Coolant Heater: Electric-immersion type, factory installed in coolant jacket system. Comply with NFPA 110 requirements for Level 1 equipment for heater capacity and with UL 499, 120VAC.

E. Cooling System: Closed loop, liquid cooled, with radiator factory mounted on engine generator mounting frame and integral engine-driven coolant pump.

1. Coolant: Solution of 50 percent ethylene-glycol-based antifreeze and 50 percent water, with anticorrosion additives as recommended by engine manufacturer.
2. Size of Radiator: Adequate to contain expansion of total system coolant, from cold start to 110 percent load condition.
3. Expansion Tank: Constructed of welded steel plate and rated to withstand maximum closed-loop coolant-system pressure for engine used. Equip with gage glass and petcock.
4. Temperature Control: Self-contained, thermostatic-control valve modulates coolant flow automatically to maintain optimum constant coolant temperature as recommended by engine manufacturer.
5. Coolant Hose: Flexible assembly with inside surface of nonporous rubber and outer covering of aging-, UV-, and abrasion-resistant fabric.

    a. Rating: 50-psig maximum working pressure with coolant at 180-degrees F, and non-collapsible under vacuum.

b. End Fittings: Flanges or steel pipe nipples with clamps to suit piping and equipment connections.

F. Muffler/Silencer: Hospital type with noise reduction range of 32 to 42 dBA. Material: Type 304 stainless steel.

G. Air-Intake Filter: Heavy-duty, engine-mounted air cleaner with replaceable dry-filter element and "blocked filter" indicator.

H. Starting System: 12 V electric, with negative ground.

1. Components: Sized so they are not damaged during a full engine-cranking cycle, with ambient temperature at maximum specified in "Performance Requirements" Article.
2. Cranking Motor: Heavy-duty unit that automatically engages and releases from engine flywheel without binding.
3. Cranking Cycle: As required by NFPA 110 for system level specified.
4. Battery: Lead acid, with capacity within ambient temperature range specified in "Performance Requirements" Article to provide specified cranking cycle at least twice without recharging.
5. Battery Cable: Size as recommended by engine manufacturer for cable length indicated. Include required interconnecting conductors and connection accessories.
6. Battery Compartment: Factory fabricated of metal with acid-resistant finish and thermal insulation. Thermostatically controlled heater shall be arranged to maintain battery above 50-degrees F regardless of external ambient temperature within range specified in "Performance Requirements" Article. Include accessories required to support and fasten batteries in place. Provide ventilation to exhaust battery gases.
7. Battery Stand: Factory-fabricated, two-tier metal with acid-resistant finish designed to hold the quantity of battery cells required and to maintain the arrangement to minimize lengths of battery interconnections.
8. Battery-Charging Alternator: Factory mounted on engine with solid-state voltage regulation and 35-A minimum continuous rating.
9. Battery Charger: Current-limiting, automatic-equalizing, and float-charging type designed for lead-acid batteries. Unit shall comply with UL 1236 and include the following features:

a. Operation: Equalizing-charging rate of 10 A shall be initiated automatically after battery has lost charge until an adjustable equalizing voltage is achieved at battery terminals. Unit shall then be automatically switched to a lower float-charging mode and shall continue to operate in that mode until battery is discharged again.
b. Automatic Temperature Compensation: Adjust float and equalize voltages for variations in ambient temperature from minus 40-degrees F to 140-degrees F to prevent overcharging at high temperatures and undercharging at low temperatures.
c. Automatic Voltage Regulation: Maintain constant output voltage regardless of input voltage variations up to plus or minus 10 percent.
d. Ammeter and Voltmeter: Flush mounted in door. Meters shall indicate charging rates.
e. Safety Functions: Sense abnormally low battery voltage and close contacts providing low battery voltage indication on control and monitoring panel. Sense high battery voltage and loss of ac input or dc output of battery charger. Either condition shall close contacts that provide a battery-charger malfunction indication at system control and monitoring panel.

f. Enclosure and Mounting: NEMA 250, Type 1 wall-mounted cabinet.

2.5 DIESEL FUEL-OIL SYSTEM

A. Comply with NFPA 30.

B. Piping: Fuel-oil piping shall be Schedule 40 black steel. Cast iron, aluminum, copper, and galvanized steel shall not be used in the fuel-oil system.

C. Main Fuel Pump: Mounted on engine to provide primary fuel flow under starting and load conditions.

D. Fuel Filtering: Remove water and contaminants larger than 1 micron.

E. Relief-Bypass Valve: Automatically regulates pressure in fuel line and returns excess fuel to source.

F. Subbase-Mounted, Double-Wall, Fuel-Oil Tank: Factory installed and piped, complying with UL 142 fuel-oil tank. Features include the following:

1. Tank level indicator.
2. Fuel-Tank Capacity: 595 gallon capacity.
3. Leak detection in interstitial space.
4. Vandal-resistant fill cap.
5. Containment Provisions: Comply with requirements of authorities having jurisdiction.
6. Level transmitter, loop powered, 4-20mA output to communicate with SCADA system.

2.6 CONTROL AND MONITORING

A. Automatic-Starting System Sequence of Operation: When mode-selector switch on the control and monitoring panel is in the automatic position, remote-control contacts in one or more separate automatic transfer switches initiate starting and stopping of engine generator. When mode-selector switch is switched to the on position, engine generator starts. The off position of same switch initiates engine generator shutdown. When engine generator is running, specified system or equipment failures or derangements automatically shut down engine generator and initiate alarms.

B. Manual-Starting System Sequence of Operation: Switching on-off switch on the generator control panel to the on position starts engine generator. The off position of same switch initiates engine generator shutdown. When engine generator is running, specified system or equipment failures or derangements automatically shut down engine generator and initiate alarms.

C. Provide minimum run time control set for 30 minutes, with override only by operation of a remote emergency-stop switch.

D. Comply with UL 508A.

E. Configuration: Operating and safety indications, protective devices, basic system controls, and engine gages shall be grouped in a common control and monitoring panel mounted on the

engine generator. Mounting method shall isolate the control panel from engine generator vibration. Panel shall be powered from the engine generator battery.

F. Control and Monitoring Panel:

1. Digital controller with integrated LCD display, controls, and microprocessor, capable of local and remote control, monitoring, and programming, with battery backup.
2. Comply with NFPA 110, Level 1.

G. Connection to Datalink:

1. A separate terminal block, factory wired to Form C dry contacts, for each alarm and status indication. The following conditions will be monitored by SCADA system:

a. Generator Run.
b. Generator System Common Alarm. Common alarms will include any fail/alarm condition, low coolant level, generator controls not in auto, battery system alarm.
c. Sub-base fuel tank level.

H. Supporting Items: Include sensors, transducers, terminals, relays, and other devices and include wiring required to support specified items. Locate sensors and other supporting items on engine or generator unless otherwise indicated.

2.7 GENERATOR OVERCURRENT AND FAULT PROTECTION

A. Overcurrent protective devices for the entire EPSS shall be coordinated to optimize selective tripping when a short circuit occurs. Coordination of protective devices shall consider both utility and EPSS as the voltage source.

1. Overcurrent protective devices for the EPSS shall be accessible only to authorized personnel.

B. Generator Circuit Breaker: Molded-case, electronic-trip type; complying with UL 489.

1. Tripping Characteristics: Adjustable long-time and short-time delay and instantaneous.
2. Trip Settings: Selected to coordinate with generator thermal damage curve.
3. Shunt Trip: Connected to trip breaker when engine generator is shut down by other protective devices.
4. Mounting: Adjacent to or integrated with control and monitoring panel.

2.8 GENERATOR, EXCITER, AND VOLTAGE REGULATOR

A. Comply with NEMA MG 1.

B. Drive: Generator shaft shall be directly connected to engine shaft. Exciter shall be rotated integrally with generator rotor.

C. Electrical Insulation: Class H material, temperature rise manufacturer’s standard for standby service.

D. Temperature Rise: Class B, 80-degrees C.

E. Stator-Winding Leads: Brought out to terminal box to permit future reconnection for other voltages if required. Provide six or 12-lead alternator.

F. Construction shall prevent mechanical, electrical, and thermal damage due to vibration, overspeed up to 125 percent of rating, and heat during operation at 110 percent of rated capacity.

G. Enclosure: Drip proof.

H. Instrument Transformers: Mounted within generator enclosure.

I. Voltage Regulator: Solid-state type, separate from exciter, providing performance as specified and as required by NFPA 110.

1. Adjusting Rheostat on Control and Monitoring Panel: Provide plus or minus 5 percent adjustment of output-voltage operating band.
2. Maintain voltage within 30 percent on one step, full load.
3. Provide anti-hunt provision to stabilize voltage.
4. Maintain frequency within 15 percent and stabilize at rated frequency within five seconds.

J. Strip Heater: Thermostatically controlled unit arranged to maintain stator windings above dew point, 120VAC.

K. Windings: Two-thirds pitch stator winding and fully linked amortisseur winding.

L. Subtransient Reactance: 12 percent, maximum.

2.9 WEATHERPROOF OUTDOOR SOUND ATTENUATED ENGINE GENERATOR ENCLOSURE

A. Description: Vandal-resistant, sound-attenuating, weatherproof steel housing, wind resistant up to 150 mph or wind speed rating per Structural Drawings. Multiple panels shall be lockable and provide adequate access to components requiring maintenance. Panels shall be removable by one person without tools. Instruments and control shall be mounted within enclosure.

B. Structural Design and Anchorage: Comply with ASCE/SEI 7 for wind loads as shown on structural drawings.

C. Hinged Doors: With padlocking provisions.

D. Muffler Location: Within enclosure.

E. Engine-Cooling Airflow through Enclosure: Maintain temperature rise of system components within required limits when unit operates at 110 percent of rated load for two hours with ambient temperature at top of range specified in system service conditions.

1. Louvers: Fixed-engine, cooling-air inlet, and discharge. Storm-proof and drainable louvers prevent entry of rain and snow.

F. Factory-Wired Accessories: Arrange for external electrical connection for lights and receptacle.

1. Convenience power receptacle: Weatherproof-in-use, 120V, 20A, GFCI, duplex receptacle, located on enclosure exterior.
2. Light switch for interior light control: Weatherproof, 120V, 20A, located inside enclosure.
3. Interior LED light(s) to illuminate interior to 20-foot-candles: 120V, damp or weatherproof enclosure, 5000K color.
4. Exterior adjustable aim small LED floodlight: 120V, 15W, 1600 lumens, 5000K color, UL rated for wet locations, 5 year warranty. RAB X34-16L or equal. Located over access door to circuit breaker.
5. NEMA 4X emergency stop break glass station, mounted on exterior (minimum of two, with one located on each side of the generator enclosure).
6. Accessories shall be powered from TPA-1.

2.10 VIBRATION ISOLATION DEVICES

A. Elastomeric Isolator Pads: Oil- and water-resistant elastomer or natural rubber, arranged in single or multiple layers, molded with a nonslip pattern and galvanized-steel baseplates of sufficient stiffness for uniform loading over pad area, and factory cut to sizes that match requirements of supported equipment.

1. Material: Standard neoprene separated by steel shims.

B. Restrained Spring Isolators: Freestanding, steel, open-spring isolators.

1. Housing: Steel with resilient, vertical-limit stops to prevent spring extension due to wind loads or if weight is removed; factory-drilled baseplate bonded to 1/4-inch thick, elastomeric isolator pad attached to baseplate underside; and adjustable equipment-mounting and -leveling bolt that acts as blocking during installation.
2. Outside Spring Diameter: Not less than 80 percent of compressed height of the spring at rated load.
3. Minimum Additional Travel: 50 percent of required deflection at rated load.
4. Lateral Stiffness: More than 80 percent of rated vertical stiffness.
5. Overload Capacity: Support 200 percent of rated load, fully compressed, without deformation or failure.
6. Minimum Deflection: 1-inch.

C. Vibration isolation devices shall not be used to accommodate misalignments or to make bends.

2.11 FINISHES

A. Indoor and Outdoor Enclosures and Components: Manufacturer's standard finish over corrosion-resistant pretreatment and compatible primer.

B. Color:

1. Paint weatherproof generator enclosure blue grey (RAL 7031).
2. Paint sub-base fuel tank black.

2.12 SOURCE QUALITY CONTROL

A. Prototype Testing: Factory test engine generator using same engine model, constructed of identical or equivalent components and equipped with identical or equivalent accessories.

1. Tests: Comply with NFPA 110.

B. Project-Specific Equipment Tests: Before shipment, factory test engine generator and other system components and accessories manufactured specifically for this Project. Perform tests at rated load and power factor. Include the following tests:

1. Test components and accessories furnished with installed unit that are not identical to those on tested prototype to demonstrate compatibility and reliability.
2. Test generator, exciter, and voltage regulator as a unit.
3. Full-load run.
4. Maximum power.
5. Voltage regulation.
6. Transient and steady-state governing.
7. Single-step load pickup.
8. Safety shutdown.
9. Provide 14 days' advance notice of tests and opportunity for observation of tests by Owner's representative.
10. Report factory test results within 10 days of completion of test.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas, equipment bases, and conditions, with Installer present, for compliance with requirements for installation and other conditions affecting packaged engine generator performance.

B. Examine roughing-in for piping systems and electrical connections. Verify actual locations of connections before packaged engine generator installation.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Comply with NECA 1 and NECA 404.

B. Comply with packaged engine generator manufacturers' written installation and alignment instructions and with NFPA 110.

C. Equipment Mounting:

1. Install packaged engine generators on cast-in-place concrete equipment bases. Comply with requirements for equipment bases and foundations specified in Section 033010 "Miscellaneous Cast-in-Place Concrete."
2. Coordinate size and location of concrete bases for packaged engine generators. Cast anchor-bolt inserts into bases. Concrete, reinforcement, and formwork requirements are specified with concrete.
3. Install packaged engine generator with elastomeric isolator pads.

D. Install packaged engine generator to provide access, without removing connections or accessories, for periodic maintenance.

E. Electrical Wiring: Install electrical devices furnished by equipment manufacturers but not specified to be factory mounted.

3.3 CONNECTIONS

A. Ground equipment according to Section 260510 "Limited Electrical for Small Projects."

B. Connect wiring according to Section 260510 "Limited Electrical for Small Projects." Provide a minimum of one 90-degree bend in flexible conduit routed to the engine generator from a stationary element.

3.4 IDENTIFICATION

A. Identify system components according to Section 260510 "Limited Electrical for Small Projects."

3.5 FIELD QUALITY CONTROL

A. Manufacturer's Field Service: Engage factory-authorized service representative to test and inspect components, assemblies, and equipment installations, including connections.

B. Perform tests and inspections with the assistance of factory-authorized service representative.

C. Tests and Inspections:

1. Perform tests recommended by manufacturer and in "Visual and Mechanical Inspection" and "Electrical and Mechanical Tests" subparagraphs below, as specified in the NETA ATS. Certify compliance with test parameters.

a. Visual and Mechanical Inspection:

1) Compare equipment nameplate data with Drawings and Specifications.

2) Inspect physical and mechanical condition.
3) Inspect anchorage, alignment, and grounding.
4) Verify that the unit is clean.

b. Electrical and Mechanical Tests:

1) Perform insulation-resistance tests according to IEEE 43.

a) Machines Larger Than 200 hp: Test duration shall be 10 minutes. Calculate polarization index.
b) Machines 200 hp or Less: Test duration shall be one minute. Calculate the dielectric-absorption ratio.

2) Test protective relay devices.
3) Verify phase rotation, phasing, and synchronized operation as required by the application.
4) Functionally test engine shutdown for low oil pressure, overtemperature, overspeed, and other protection features as applicable.
5) Conduct performance test according to NFPA 110.
6) Verify correct functioning of the governor and regulator.

2. NFPA 110 Acceptance Tests: Perform tests required by NFPA 110 that are additional to those specified here, including, but not limited to, single-step full-load pickup test.
3. Battery Tests: Equalize charging of battery cells according to manufacturer's written instructions. Record individual cell voltages.

a. Measure charging voltage and voltages between available battery terminals for full-charging and float-charging conditions. Check electrolyte level and specific gravity under both conditions.
b. Test for contact integrity of all connectors. Perform an integrity load test and a capacity load test for the battery.
c. Verify acceptance of charge for each element of the battery after discharge.
d. Verify that measurements are within manufacturer's specifications.

4. Battery-Charger Tests: Verify specified rates of charge for both equalizing and float-charging conditions.
5. System Integrity Tests: Methodically verify proper installation, connection, and integrity of each element of engine generator system before and during system operation. Check for air, exhaust, and fluid leaks.
6. Noise-Level Tests: Measure A-weighted level of noise emanating from engine generator installation, including engine exhaust and cooling-air intake and discharge, at four locations on the property line, and compare measured levels with required values.

D. Load Bank Test: Perform four-hour load testing of each engine-generator set using a portable resistance load bank. Record performance at 30 minute intervals.

E. Coordinate tests with tests for transfer switches and run them concurrently.

F. Test instruments shall have been calibrated within the past 12 months, traceable to NIST Calibration Services, and adequate for making positive observation of test results. Make calibration records available for examination on request.

G. Leak Test: After installation, charge exhaust, coolant, and fuel systems and test for leaks. Repair leaks and retest until no leaks exist.

H. Operational Test: After electrical circuitry has been energized, start units to confirm proper motor rotation and unit operation for generator and associated equipment.

I. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

J. Retest: Correct deficiencies identified by tests and observations, and retest until specified requirements are met.

K. Report results of tests and inspections in writing. Record adjustable relay settings and measured insulation resistances, time delays, and other values and observations. Attach a label or tag to each tested component, indicating satisfactory completion of tests.

L. Infrared Scanning: After Substantial Completion, but not more than 60 days after final acceptance, perform an infrared scan of each power wiring termination and each bus connection while running with maximum load. Remove all access panels, so terminations and connections are accessible to portable scanner.

1. Follow-up Infrared Scanning: Perform an additional follow-up infrared scan 11 months after date of Substantial Completion.
2. Instrument: Use an infrared scanning device designed to measure temperature or to detect significant deviations from normal values. Provide calibration record for device.
3. Record of Infrared Scanning: Prepare a certified report that identifies terminations and connections checked and that describes scanning results. Include notation of deficiencies detected, remedial action taken, and observations after remedial action.

3.6 DEMONSTRATION

A. Engage factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain packaged engine generators.

END OF SECTION 263213.13

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SECTION 263600 - TRANSFER SWITCHES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes automatic transfer switches rated 600 V and less.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for transfer switches.
2. Include rated capacities, operating characteristics, electrical characteristics, and accessories.

B. Shop Drawings:

1. Include plans, elevations, sections, details showing minimum clearances, conductor entry provisions, gutter space, and installed features and devices.
2. Include material lists for each switch specified.
3. Single-Line Diagram: Show connections between transfer switch, power sources, and load.

1.4 INFORMATIONAL SUBMITTALS

A. Field quality-control reports.

1.5 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For each type of product to include in emergency, operation, and maintenance manuals.

1. Include the following:

a. Features and operating sequences, both automatic and manual.
b. List of all factory settings of relays; provide relay-setting and calibration instructions, including software, where applicable.

1.6 FIELD CONDITIONS

A. Interruption of Existing Electrical Service: Do not interrupt electrical service to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary electrical service:

1. Notify Owner no fewer than two seven days in advance of proposed interruption of electrical service.
2. Do not proceed with interruption of electrical service without Owner's written permission.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

B. Comply with NEMA ICS 1.

C. Comply with NFPA 110.

D. Comply with UL 1008 unless requirements of these Specifications are stricter.

E. Indicated Current Ratings: Apply as defined in UL 1008 for continuous loading and total system transfer, including tungsten filament lamp loads not exceeding 30 percent of switch ampere rating, unless otherwise indicated.

F. Tested Fault-Current Closing and Short-Circuit Ratings: Adequate for duty imposed by protective devices at installation locations in Project under the fault conditions indicated, based on testing according to UL 1008.

1. Short-time withstand capability for 0.3 seconds.

G. Repetitive Accuracy of Solid-State Controls: All settings shall be plus or minus 2 percent or better over an operating temperature range of minus 20 to plus 70-degrees C.

H. Resistance to Damage by Voltage Transients: Components shall meet or exceed voltage-surge withstand capability requirements when tested according to IEEE C62.62. Components shall meet or exceed voltage-impulse withstand test of NEMA ICS 1.

I. Electrical Operation: Accomplish by nonfused, momentarily energized solenoid or electric-motor-operated mechanism. Switches for emergency or standby purposes shall be mechanically and electrically interlocked in both directions to prevent simultaneous connection to both power sources unless closed transition.

J. Neutral Switching: Where four-pole switches are indicated, provide overlapping neutral contacts.

K. Neutral Terminal: Solid and fully rated unless otherwise indicated.

L. Heater: Equip switches exposed to outdoor temperatures and humidity, and other units indicated, with an internal heater. Provide thermostat within enclosure to control heater.

M. Factory Wiring: Train and bundle factory wiring and label, consistent with Shop Drawings, by color-code or by numbered or lettered wire and cable shrinkable sleeve markers at terminations. Color-coding and wire and cable markers are specified in Section 260510 "Limited Electrical for Small Projects."

1. Designated Terminals: Pressure type, suitable for types and sizes of field wiring indicated.
2. Power-Terminal Arrangement and Field-Wiring Space: Suitable for top, side, or bottom entrance of feeder conductors as indicated.
3. Control Wiring: Equipped with lugs suitable for connection to terminal strips.
4. Accessible via front access.

N. Enclosures: General-purpose NEMA 250, Type 4X, complying with NEMA ICS 6 and UL 508, unless otherwise indicated.

2.2 CONTACTOR-TYPE AUTOMATIC TRANSFER SWITCHES

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. ABB (Electrification Products Division).
2. Generac Power Systems, Inc.
3. Kohler Power Systems.

B. Comply with Level 1 equipment according to NFPA 110.

C. Switch Characteristics: Designed for continuous-duty repetitive transfer of full-rated current between active power sources.

1. Limitation: Switches using molded-case switches or circuit breakers or insulated-case circuit-breaker components are unacceptable.
2. Switch Action: Double throw; mechanically held in both directions.
3. Contacts: Silver composition or silver alloy for load-current switching. Contactor-style automatic transfer-switch units, rated 600 A and higher, shall have separate arcing contacts.
4. Conductor Connectors: Suitable for use with conductor material and sizes.
5. Material: Tin-plated copper.
6. Main and Neutral Lugs: Mechanical type.
7. Ground Lugs and Bus-Configured Terminators: Mechanical type.
8. Ground bar.
9. Connectors shall be marked for conductor size and type according to UL 1008.

D. Automatic Open-Transition Transfer Switches: Interlocked to prevent the load from being closed on both sources at the same time.

1. Sources shall be mechanically and electrically interlocked to prevent closing both sources on the load at the same time.

E. Automatic Delayed-Transition Transfer Switches: Pauses or stops in intermediate position to momentarily disconnect both sources, with transition controlled by programming in the automatic transfer-switch controller. Interlocked to prevent the load from being closed on both sources at the same time.

1. Adjustable Time Delay: For override of normal-source voltage sensing to delay transfer and engine start signals for alternative source. Adjustable from zero to six seconds, and factory set for one second.
2. Sources shall be mechanically and electrically interlocked to prevent closing both sources on the load at the same time.
3. Fully automatic break-before-make operation with center off position.
4. Failure of power source serving load initiates automatic break-before-make transfer.

F. Manual Switch Operation: Under load, with door closed and with either or both sources energized. Transfer time is same as for electrical operation. Control circuit automatically disconnects from electrical operator during manual operation.

G. Automatic Transfer-Switch Controller Features:

1. Controller operates through a period of loss of control power.
2. Undervoltage Sensing for Each Phase of Normal and Alternate Source: Sense low phase-to-ground voltage on each phase. Pickup voltage shall be adjustable from 85 to 100 percent of nominal, and dropout voltage shall be adjustable from 75 to 98 percent of pickup value. Factory set for pickup at 90 percent and dropout at 85 percent.
3. Voltage/Frequency Lockout Relay: Prevent premature transfer to generator. Pickup voltage shall be adjustable from 85 to 100 percent of nominal. Factory set for pickup at 90 percent. Pickup frequency shall be adjustable from 90 to 100 percent of nominal. Factory set for pickup at 95 percent.
4. Time Delay for Retransfer to Normal Source: Adjustable from zero to 30 minutes, and factory set for 10 minutes. Override shall automatically defeat delay on loss of voltage or sustained undervoltage of emergency source, provided normal supply has been restored.
5. Test Switch: Simulate normal-source failure.
6. Switch-Position Pilot Lights: Indicate source to which load is connected.
7. Source-Available Indicating Lights: Supervise sources via transfer-switch normal- and emergency-source sensing circuits.

    a. Normal Power Supervision: Green light with nameplate engraved "Normal Source Available."
    b. Emergency Power Supervision: Red light with nameplate engraved "Emergency Source Available."

8. Unassigned Auxiliary Contacts: Two normally open, single-pole, double-throw contacts for each switch position, rated 10 A at 240-V ac.
9. Transfer Override Switch: Overrides automatic retransfer control so transfer switch will remain connected to emergency power source regardless of condition of normal source. Pilot light indicates override status.

10. Engine Starting Contacts: One isolated and normally closed, and one isolated and normally open; rated 10 A at 32-V dc minimum.
11. Engine Shutdown Contacts: Time delay adjustable from zero to five minutes, and factory set for five minutes. Contacts shall initiate shutdown at remote engine-generator controls after retransfer of load to normal source.
12. Engine-Generator Exerciser: Solid-state, programmable-time switch starts engine generator and transfers load to it from normal source for a preset time, then retransfers and shuts down engine after a preset cool-down period. Initiates exercise cycle at preset intervals adjustable from 7 to 30 days. Running periods shall be adjustable from 10 to 30 minutes. Factory settings shall be for 7-day exercise cycle, 20-minute running period, and 5-minute cool-down period. Exerciser features include the following:

    a. Exerciser Transfer Selector Switch: Permits selection of exercise with and without load transfer.
    b. Push-button programming control with digital display of settings.
    c. Integral battery operation of time switch when normal control power is unavailable.

2.3 TRANSFER SWITCH ACESSORIES

A. Dry status contacts to report switch position to 24VDC SCADA / RTU system. (Future use).

2.4 SOURCE QUALITY CONTROL

A. Factory Tests: Test and inspect components, assembled switches, and associated equipment according to UL 1008. Ensure proper operation. Check transfer time and voltage, frequency, and time-delay settings for compliance with specified requirements. Perform dielectric strength test complying with NEMA ICS 1.

B. Prepare test and inspection reports.

1. For each of the tests required by UL 1008, performed on representative devices, for legally required systems. Include results of test for the following conditions:

    a. Overvoltage.
    b. Undervoltage.
    c. Loss of supply voltage.
    d. Reduction of supply voltage.
    e. Alternative supply voltage or frequency is at minimum acceptable values.
    f. Temperature rise.
    g. Dielectric voltage-withstand; before and after short-circuit test.
    h. Overload.
    i. Contact opening.
    j. Endurance.
    k. Short circuit.
    l. Short-time current capability.
    m. Receptacle withstand capability.
    n. Insulating base and supports damage.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Floor-Mounting Switch: Anchor to floor by bolting.

1. Install transfer switches on cast-in-place concrete equipment base(s). Comply with requirements for equipment bases and foundations specified in Section 033010 "Miscellaneous Cast-in-Place Concrete."
2. Coordinate size and location of concrete bases. Cast anchor-bolt inserts into bases.
3. Provide workspace and clearances required by NFPA 70.

B. Identify components according to Section 260510 "Limited Electrical for Small Projects."

C. Set field-adjustable intervals and delays, relays, and engine exerciser clock.

D. Comply with NECA 1.

3.2 CONNECTIONS

A. Wiring to Remote Components: Match type and number of cables and conductors to generator sets, control, and communication requirements of transfer switches as recommended by manufacturer. Increase raceway sizes at no additional cost to Owner if necessary to accommodate required wiring.

B. Wiring Method: Install cables in raceways and cable trays except within electrical enclosures. Conceal raceway and cables except in unfinished spaces.

1. Comply with requirements for raceways and boxes specified in Section 260510 "Limited Electrical for Small Projects."

C. Wiring within Enclosures: Bundle, lace, and train conductors to terminal points with no excess and without exceeding manufacturer's limitations on bending radii.

D. Ground equipment according to Section 260510 "Limited Electrical for Small Projects."

E. Connect wiring according to Section 260510 "Limited Electrical for Small Projects."

F. Connect twisted pair cable according to Section 260510 "Limited Electrical for Small Projects."

G. Route and brace conductors according to manufacturer's written instructions**.** Do not obscure manufacturer's markings and labels.

H. Final connections to equipment shall be made with liquidtight, flexible metallic conduit no more than 18 inches in length.

3.3 FIELD QUALITY CONTROL

A. Manufacturer's Field Service: Engage factory-authorized service representative to test and inspect components, assemblies, and equipment installations, including connections.

B. Perform the following tests and inspections:

1. After installing equipment, test for compliance with requirements according to NETA ATS.
2. Visual and Mechanical Inspection:

    a. Compare equipment nameplate data with Drawings and Specifications.
    b. Inspect physical and mechanical condition.
    c. Inspect anchorage, alignment, grounding, and required clearances.
    d. Verify that the unit is clean.
    e. Verify appropriate lubrication on moving current-carrying parts and on moving and sliding surfaces.
    f. Verify that manual transfer warnings are attached and visible.
    g. Verify tightness of all control connections.
    h. Inspect bolted electrical connections for high resistance using one of the following methods, or both:

        1) Use of low-resistance ohmmeter.
        2) Verify tightness of accessible bolted electrical connections by calibrated torque-wrench method according to manufacturer's published data.

    i. Perform manual transfer operation.
    j. Verify positive mechanical interlocking between normal and alternate sources.
    k. Perform visual and mechanical inspection of surge arresters.
    l. Inspect control power transformers.

        1) Inspect for physical damage, cracked insulation, broken leads, tightness of connections, defective wiring, and overall general condition.
        2) Verify that primary and secondary fuse or circuit-breaker ratings match Drawings.
        3) Verify correct functioning of drawout disconnecting contacts, grounding contacts, and interlocks.

3. Electrical Tests:

    a. Perform insulation-resistance tests on all control wiring with respect to ground.
    b. Perform contact/pole-resistance test. Compare measured values with manufacturer's acceptable values.
    c. Verify settings and operation of control devices.
    d. Calibrate and set all relays and timers.
    e. Verify phase rotation, phasing, and synchronized operation.
    f. Perform automatic transfer tests.
    g. Verify correct operation and timing of the following functions:

1) Normal source voltage-sensing and frequency-sensing relays.
2) Engine start sequence.
3) Time delay on transfer.
4) Alternative source voltage-sensing and frequency-sensing relays.
5) Automatic transfer operation.
6) Interlocks and limit switch function.
7) Time delay and retransfer on normal power restoration.
8) Engine cool-down and shutdown feature.

4. Measure insulation resistance phase-to-phase and phase-to-ground with insulation-resistance tester. Include external annunciation and control circuits. Use test voltages and procedure recommended by manufacturer. Comply with manufacturer's specified minimum resistance.

   a. Check for electrical continuity of circuits and for short circuits.
   b. Inspect for physical damage, proper installation and connection, and integrity of barriers, covers, and safety features.
   c. Verify that manual transfer warnings are properly placed.
   d. Perform manual transfer operation.

5. After energizing circuits, perform each electrical test for transfer switches stated in NETA ATS and demonstrate interlocking sequence and operational function for each switch at least three times.

   a. Simulate power failures of normal source to automatic transfer switches and retransfer from emergency source with normal source available.
   b. Simulate loss of phase-to-ground voltage for each phase of normal source.
   c. Verify time-delay settings.
   d. Verify pickup and dropout voltages by data readout or inspection of control settings.
   e. Test bypass/isolation unit functional modes and related automatic transfer-switch operations.
   f. Perform contact-resistance test across main contacts and correct values exceeding 500 microhms and values for one pole deviating by more than 50 percent from other poles.
   g. Verify proper sequence and correct timing of automatic engine starting, transfer time delay, retransfer time delay on restoration of normal power, and engine cool-down and shutdown.

6. Ground-Fault Tests: Coordinate with testing of ground-fault protective devices for power delivery from both sources.

   a. Verify grounding connections and locations and ratings of sensors.

C. Coordinate tests with tests of generator and run them concurrently.

D. Report results of tests and inspections in writing. Record adjustable relay settings and measured insulation and contact resistances and time delays. Attach label or tag to each tested component indicating satisfactory completion of tests.

E. Transfer switches will be considered defective if they do not pass tests and inspections.

F. Remove and replace malfunctioning units and retest as specified above.

G. Prepare test and inspection reports.

H. Infrared Scanning: After Substantial Completion, but not more than 60 days after Final Acceptance, perform an infrared scan of each switch. Remove all access panels so joints and connections are accessible to portable scanner.

1. Instrument: Use an infrared scanning device designed to measure temperature or to detect significant deviations from normal values. Provide calibration record for device.
2. Record of Infrared Scanning: Prepare a certified report that identifies switches checked and that describes scanning results. Include notation of deficiencies detected, remedial action taken, and observations after remedial action.
3. Follow-up Infrared Scanning: Perform an additional follow-up infrared scan of each switch 11 months after date of Substantial Completion.

3.4 DEMONSTRATION

A. Train Owner's maintenance personnel to adjust, operate, and maintain transfer switches and related equipment.

B. Training shall include testing ground-fault protective devices and instructions to determine when the ground-fault system shall be retested. Include instructions on where ground-fault sensors are located and how to avoid negating the ground-fault protection scheme during testing and circuit modifications.

C. Coordinate this training with that for generator equipment.

END OF SECTION 263600

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SECTION 310515 - SOILS AND AGGREGATES FOR EARTHWORK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Soils: Soil and topsoil materials.
2. Aggregates: Coarse and fine aggregate materials.

B. Related Sections:

1. Section 312333 “Trenching and Backfilling” for excavation, backfilling, and compaction in trench excavations.

1.3 ACTION SUBMITTALS

A. Quality Control Testing: Submit conformance testing performed by a certified independent laboratory engaged by Contractor for all fill materials. Verify maximum density, gradation, Atterberg limits, sand equivalent, and other applicable criteria at least 72 hours prior to importing or placing any fill. Perform additional conformance testing at a minimum frequency of 1 per every 2000 cubic yards or change in material.

1.4 INFORMATIONAL SUBMITTALS

A. Materials Source: Submit name and location of imported materials suppliers.

B. Source’s Certificate: Certify materials meet or exceed specified requirements.

C. Material Test Reports: For each soil and aggregate material proposed for fill and backfill as follows:

1. Classification according to ASTM D2487.
2. Laboratory compaction curve according to ASTM D1557.
3. Test Reports: Submit any test reports required by this Section to Engineer.

1.5 QUALITY ASSURANCE

A. Furnish each soil and topsoil material from single source throughout the Work unless an alternate source is approved by Engineer.

B. Furnish each aggregate material from single source throughout the Work unless an alternate source is approved by Engineer.

C. Perform Work according to Florida Department of Transportation standards.

D. Maintain one copy of each standard affecting Work of this Section on Site.

1.6 FIELD CONDITIONS

A. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during earth-moving operations.

1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.
2. Provide alternate routes around closed or obstructed traffic ways if required by Owner or authorities having jurisdiction.

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

A. Common Fill:

1. Consists of approved on site excavated material or imported fill material that is composed of durable soil free of debris, organic matter, or other deleterious materials.
2. Does not contain stones larger than 6 inches in largest diameter.
3. Has a maximum of 20 percent passing the No. 200 sieve.
4. Does not contain granite blocks, broken concrete, masonry rubble, or other similar materials and shall have physical properties such that it can be readily spread and compacted during filling.

B. Select Common Fill:

1. As specified above for common fill except that the material shall contain no stones larger than 2 inches in largest diameter.

C. Structural Fill:

1. Consists of mineral soil free of organic material, loam, debris, frozen soil or other deleterious material which may be compressible, or which cannot be properly compacted.
2. Consists of materials with the following gradation:

Sieve Size	Percent Finer by Weight
3-inch	100
No. 4	70 to 100
No. 40	5 to 100
No. 200	0 to 12

2.2 TOPSOIL MATERIALS

A. Topsoil:

1. Excavated and reused material.
2. Graded.
3. Free of roots, rocks larger than 1/2 inch, subsoil, debris, large weeds, and foreign matter.

   a. Screening: Double screened.

4. Conforming to ASTM D2487 Group Symbol OH.

2.3 COARSE AGGREGATE MATERIALS

A. Coarse Aggregate - Crushed Stone: Natural stone; free of clay, shale, organic matter; conforming to Florida Department of Transportation standard.

   1. Coarse Aggregate Designation: No. 57.

2.4 FINE AGGREGATE MATERIALS

A. Fine Aggregate - Sand: Natural river or bank sand; free of silt, clay, loam, friable or soluble materials, and organic matter; graded according to ASTM C33; within the following limits:

2.5 SOURCE QUALITY CONTROL

A. Soil Material - Testing and Analysis: Perform in accordance with ASTM D1557.

B. Fine Aggregate Material - Testing and Analysis: Perform according to ASTM D1557.

C. When tests indicate materials do not meet specified requirements, change material and retest.

D. Furnish materials of each type from same source throughout the Work.

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PART 3 - EXECUTION

3.1 EXCAVATION - SOILS

A. Excavate soil and topsoil from areas designated. Strip topsoil to full depth of topsoil in designated areas.

B. Stockpile excavated material meeting requirements for soil and topsoil materials.

C. Remove excess excavated materials not intended for reuse, from site.

D. Remove excavated materials not meeting requirements for soil and topsoil materials from site.

3.2 EXCAVATION - AGGREGATES

A. Coordinate excavation of aggregate materials from on-site locations.

B. Stockpile excavated material meeting requirements for aggregate.

C. Remove excess excavated aggregate materials not intended for reuse, from site.

D. Remove excavated materials not meeting requirements aggregate materials from site.

3.3 STOCKPILING

A. Stockpile materials on site at locations indicated on Drawings.

B. Stockpile in sufficient quantities to meet Project schedule and requirements.

C. Separate different soil and aggregate materials with dividers or stockpile individually to prevent mixing. Prevent intermixing of soil types or contamination.

D. Stockpile topsoil 8 feet high maximum.

E. Direct surface water away from stockpile site to prevent erosion or deterioration of materials.

F. Stockpile unsuitable materials on impervious liner and cover to prevent erosion and leaching, until disposed of.

3.4 STOCKPILE CLEANUP

A. Remove stockpile, leave area in clean and neat condition. Grade site surface to prevent free standing surface water.

END OF SECTION 310515

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SECTION 311000 - SITE CLEARING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Protecting existing vegetation to remain.
2. Removing existing vegetation.
3. Clearing and grubbing.
4. Stripping and stockpiling topsoil.
5. Stripping and stockpiling rock.
6. Disconnecting, capping or sealing, abandoning in place, removing and relocating site utilities.
7. Removing existing improvements.

B. Related Requirements:

1. Section 312500 “Erosion and Sedimentation Controls” for temporary protection of erosion and sedimentation.
2. Section 312323.33 “Flowable Fill” for abandoning existing site utilities.

1.3 DEFINITIONS

A. Subsoil: Soil beneath the level of subgrade; soil beneath the topsoil layers of a naturally occurring soil profile, typified by less than 1 percent organic matter and few soil organisms.

B. Surface Soil: Soil that is present at the top layer of the existing soil profile. In undisturbed areas, surface soil is typically called "topsoil," but in disturbed areas such as urban environments, the surface soil can be subsoil.

C. Topsoil: Top layer of the soil profile consisting of existing native surface topsoil or existing in-place surface soil; the zone where plant roots grow. Its appearance is generally friable, pervious, and black or a darker shade of brown, gray, or red than underlying subsoil; reasonably free of subsoil, clay lumps, gravel, and other objects larger than 2 inches in diameter; and free of weeds, roots, toxic materials, or other nonsoil materials.

D. Tree-Protection Zone: Area surrounding individual trees or groups of trees to be protected during construction.

E. Vegetation: Trees, shrubs, groundcovers, grass, and other plants.

1.4 MATERIAL OWNERSHIP

A. Except for materials indicated to be stockpiled, salvaged or otherwise remain Owner's property, cleared materials shall become Contractor's property and shall be removed from Project site.

1.5 INFORMATIONAL SUBMITTALS

A. Existing Conditions: Documentation of existing trees and plantings, adjoining construction, and site improvements that establishes preconstruction conditions that might be misconstrued as damage caused by site clearing.

1. Use sufficiently detailed photographs or video recordings.
2. Include plans and notations to indicate specific wounds and damage conditions of each tree or other plant designated to remain.

B. Topsoil stripping and stockpiling program.

1.6 FIELD CONDITIONS

A. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during site-clearing operations.

1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.
2. Provide alternate routes around closed or obstructed roadways if required by Owner or authorities having jurisdiction.

B. Improvements on Adjoining Property: Authority for performing site clearing indicated on property adjoining Owner's property will be obtained by Owner before award of Contract.

1. Do not proceed with work on adjoining property until directed by Engineer.

C. Salvageable Improvements: Carefully remove items indicated to be salvaged and relocate or provide to the Owner as indicated.

D. Utility Locator Service: Notify Sunshine One Call before site clearing.

E. Do not commence site clearing operations until temporary erosion and sedimentation control and tree-protection measures are in place.

F. Soil Stripping, Handling, and Stockpiling: Perform only when the soil is dry or slightly moist.

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PART 2 - PRODUCTS

2.1 MATERIALS

A. Satisfactory Soil Material: Requirements for satisfactory soil material are specified in Section 310515 "Soils and Aggregate for Earthwork."

1. Obtain approved borrow soil material off-site when satisfactory soil material is not available on-site.

B. Flowable Fill: Requirements for flowable fill material are specified in Section 312323.33 “Flowable Fill”.

PART 3 - EXECUTION

3.1 PREPARATION

A. Protect and maintain benchmarks and survey control points from disturbance during construction.

B. Verify that trees, shrubs, and other vegetation to remain or to be relocated have been flagged and that protection zones have been identified and enclosed according to requirements indicated on the Drawings.

C. Protect existing site improvements to remain from damage during construction.

1. Restore damaged improvements to their original condition, as acceptable to Owner.

D. Provide temporary erosion and sedimentation control measures to prevent soil erosion and discharge of soil bearing water runoff to adjacent areas prior to commencement of any site clearing and demolition activities.

E. Call Local Utility Line Information service not less than three working days before performing Work.

1. Request underground utilities to be located and marked within and surrounding construction areas.

3.2 TREE AND PLANT PROTECTION

A. Protect trees and plants remaining on-site as shown on Drawings.

B. Repair or replace trees, shrubs, and other vegetation indicated to remain or be relocated that are damaged by construction operations shown on Drawings.

3.3 EXISTING UTILITIES

A. Locate, identify, disconnect, and seal or cap utilities indicated to be removed or abandoned in place.

1. Arrange with utility companies to shut off indicated utilities.

B. Excavate for and remove underground utilities indicated to be removed.

C. Use flowable fill to abandon underground utilities indicated to be abandoned in place.

3.4 CLEARING AND GRUBBING

A. Remove obstructions, trees, shrubs, and other vegetation to permit installation of new construction.

1. Do not remove trees, shrubs, and other vegetation indicated to remain or to be relocated.
2. Use only hand methods or air spade for grubbing within protection zones.
3. Chip removed tree branches and dispose of off-site.

B. Fill depressions caused by clearing and grubbing operations with satisfactory soil material unless further excavation or earthwork is indicated.

1. Place fill material in horizontal layers not exceeding loose depth of 8 inches and compact each layer to a density equal to adjacent original ground.

3.5 TOPSOIL STRIPPING

A. Remove sod and grass before stripping topsoil.

B. Strip topsoil to depth in a manner to prevent intermingling with underlying subsoil or other waste materials.

1. Remove subsoil and nonsoil materials from topsoil, including clay lumps, gravel, and other objects larger than 2 inches in diameter; trash, debris, weeds, roots, and other waste materials.

C. Stockpile topsoil away from edge of excavations without intermixing with subsoil or other materials. Grade and shape stockpiles to drain surface water. Cover to prevent windblown dust and erosion by water.

1. Limit height of topsoil stockpiles to 8 feet.
2. Do not stockpile topsoil within protection zones.
3. Dispose of surplus topsoil. Surplus topsoil is that which exceeds quantity indicated to be stockpiled or reused.
4. Stockpile surplus topsoil to allow for respreading deeper topsoil.

3.6 STOCKPILING RIPRAP

A. Stockpile riprap as indicated on Drawings without intermixing with other materials. Cover to prevent windblown debris from accumulating among rocks.

1. Do not stockpile riprap within protection zones.
2. Stockpiled riprap shall be reused on-site as indicated on Drawings.

3.7 SITE IMPROVEMENTS

A. Remove existing above- and below-grade improvements as indicated and necessary to facilitate new construction.

B. Remove slabs, paving, curbs, gutters, and aggregate base as indicated.

1. Unless existing full-depth joints coincide with line of demolition, neatly saw-cut along line of existing pavement to remain before removing adjacent existing pavement. Saw-cut faces vertically.
2. Paint cut ends of steel reinforcement in concrete to remain with two coats of anti-rust coating, following coating manufacturer's written instructions. Keep paint off surfaces that will remain exposed.

3.8 DISPOSAL OF SURPLUS AND WASTE MATERIALS

A. Remove surplus soil material, unsuitable topsoil, obstructions, demolished materials, and waste materials including trash and debris, and legally dispose of them off Owner's property.

END OF SECTION 311000

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SECTION 312000 - EARTHWORK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. General: Earthwork includes clearing and stripping, procurement of on-site and imported fill material, excavating, placing, and compacting fill and backfill, structural excavating and backfilling, transportation and storage of excess earthwork materials; disposal of unsuitable, waste, and surplus materials; restoration of excavation and trench surfaces; and subsidiary work necessary to complete the grading of developed areas to conform with required lines, grades, and slopes.

B. Work includes, but is not necessarily limited to; excavation for structures, tanks, foundations, manholes, vaults, electrical manholes, conduits, cables, raceways and ducts, pipes, paving; embankments; grading; and related work such as sheeting, bracing and dewatering.

C. Provide services of licensed Professional Engineer to prepare temporary excavation support system, dewatering system designs, and submittals.

D. Provide temporary excavation support systems, including sheeting, shoring, and bracing, to ensure the safety of personnel and protect adjacent structures, piping, and other materials in accordance with Federal, State and local laws, regulations, and requirements. Temporary excavation support systems are specified in Section 315000 “Excavation Support and Protection.”

E. Provide temporary dewatering, surface water control systems, and operate to dewater and maintain excavations in a dry condition. Control drainage into excavations and remove seepage water and rainwater. Dewatering and surface water control are specified in Section 312319 “Dewatering.”

F. Examine site and review available geotechnical report prior to submitting a proposal, taking into consideration project conditions that may affect the work. Owner and Design Engineer do not assume responsibility for variations of subsurface conditions at locations other than places shown and at the time investigations were made.

G. Do not initiate extra work without written notification to Owner and Engineer and receiving Owner’s written approval in response.

H. Protect existing structures and utilities that remain.

I. Related Requirements:

1. Section 310515 “Soils and Aggregates for Earthwork” for fill materials.
2. Section 311000 "Site Clearing" for site preparation work, including stripping, grubbing, stripping and stockpiling topsoil, and removal of above- and below-grade improvements and utilities.
3. Section 312333 “Trenching and Backfilling” for stated work.
4. Section 312319 "Dewatering" for controlling surface and groundwater and disposing of water during construction.
5. Section 312500 “Erosion and Sedimentation Controls” for temporary stated work.
6. Section 315000 "Excavation Support and Protection" for shoring, bracing, and sheet piling of excavations.

1.3 UNIT PRICES

A. Basis of Measurement: By cubic yard.

B. Basis of Payment: Includes excavating existing soil, supplying soil materials, and stockpiling.

1.4 DEFINITIONS

A. Backfill: Soil material or controlled low-strength material used to fill an excavation.

1. Initial Backfill: Backfill placed beside and over pipe in a trench, including haunches to support sides of pipe.
2. Final Backfill: Backfill placed over initial backfill to fill a trench.

B. Borrow Soil: Satisfactory soil imported from off-site for use as fill or backfill.

C. Coverage: Pass of compaction equipment over the complete surface area of exposed lift or subgrade to receive compaction.

D. Excavation: Removal of material encountered above subgrade elevations and to lines and dimensions indicated.

1. Authorized Additional Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions as directed by Engineer. Authorized additional excavation and replacement material will be paid for according to Contract provisions for unit prices
2. Unauthorized Additional Excavation: Excavation as directed by Engineer to correct Contractor’s work not in compliance with Contract Documents, which will be performed without additional compensation.
3. Bulk Excavation: Excavation more than 10 feet in width and more than 30 feet (9 m) in length.
4. Unauthorized Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions without direction by Engineer. Unauthorized excavation, as well as remedial work directed by Engineer, shall be provided without additional compensation.

E. Finished Grade: Required final grade elevation indicated on Drawings. Spot elevations take precedent over proposed contours.

F. In-the-Dry: An excavation subgrade where groundwater level: has been lowered to at least 2 feet below lowest level of excavation; is stable with no ponded water, mud, or muck; is able to support construction equipment without rutting or disturbance; and is suitable for placement and compaction of fill material, pipe, or concrete foundations.

G. Objectionable Material: Includes topsoil, organic matter, contaminated soil, construction debris, perishable materials, snow, ice, frozen earth, and rocks or lumps of cemented soils over 6 inches in maximum dimension.

H. Optimum Moisture Content: Moisture content (percent by dry weight) corresponding to maximum dry density of the same material as determined by ASTM Test Method D1557 or AASHTO T-180 as directed by Engineer.

I. Overexcavation: Removal of unsuitable soil or objectionable material at or below the normal grade of excavation or subgrade as indicated on Drawings.

J. Percent Compaction: Required in-place dry density of the material, expressed as a percentage of the maximum dry density of the same material, as determined in the laboratory by ASTM Test Method D1557 or AASHTO T-180 as directed by Engineer.

K. Structures: Buildings, wet wells, footings, foundations, retaining walls, slabs, tanks, curbs, mechanical and electrical appurtenances, manholes and vaults, or other man-made stationary features constructed above or below the ground surface.

L. Subgrade: Required surface of subsoil, borrow fill, or compacted fill that is immediately beneath site improvements, especially dimensioned fill, paving, or other surfacing material.

M. Unsuitable Soil: Includes existing fill materials, organic soils, weak native soils, or clays with a plasticity index of greater than 30, and any materials that cannot be properly placed and compacted as specified.

N. Utilities: On-site underground pipes, conduits, ducts, and cables as well as underground services within buildings.

O. Zone of Influence: A line extending at least 2 feet (600 mm) beyond foundation or pipeline edge, then outward and downward at a slope of 1 horizontal to 1 vertical. Do no excavation below foundation of existing structures or pipeline.

P. Professional Engineer: Registered Professional Engineer meeting project qualifications and who is hired by Contractor.

Q. The Engineer: The Engineer or designated representative hired by Owner.

1. Approval given by The Engineer shall not relieve Contractor of its responsibilities for performing the work in accordance with Contract Document requirements.

1.5 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct pre-excavation conference at project site.

1. Review methods and procedures related to earthmoving, including, but not limited to, the following:

    a. Personnel and equipment needed to make progress and avoid delays.
    b. Coordination of Work with utility locator service.
    c. Coordination of Work and equipment movement with the locations of tree- and plant-protection zones.
    d. Extent of trenching by hand or with air spade.
    e. Field quality control.

1.6 ACTION SUBMITTALS

A. Coordinate various submittal types required by this Section with requirements of dewatering, support of excavation, rock removal, controlled blasting, and geotechnical instrumentation submittals specified in other Sections.

B. Slope Stability Evaluation: Submit a temporary excavation slope stability evaluation in accordance with OSHA for temporary slopes over 20 feet in height or where existing or proposed facilities or property limits are located at the top of the slope and within a distance from the top of the slope equal to the slope height.

1. Prepare evaluation by a licensed Professional Engineer registered in the State of Florida where the work occurs.

C. Site Characterization Data: Submit following information regarding off-site source and material:

1. Site location.
2. Present and past usage of the source site and material.
3. Previously existing reports associated with an assessment of source site relating to presence of oil or other hazardous materials.
4. Location within the site from which the material will be obtained.

D. Samples: Submit representative sample weighing approximately 50 pounds of each fill material, filter sand, and crushed stone contained in sealed 5-gallon containers, at least 30 calendar days prior to date of anticipated use of each material.

E. Submit laboratory test results for fill materials that include maximum density, gradation, Atterberg limits, sand equivalent, and other applicable criteria, at least 72 hours prior to importing or placing fill.

F. Prepare excavation support system designs by a licensed Professional Engineer, registered in State in which the work is located and having a minimum of 5 years of professional experience in design and construction of excavation support systems.

1. Submit original and three copies of licensed Professional Engineer's certification, stating excavation support systems designs have been prepared by Professional Engineer who is responsible for their execution.

1.7 INFORMATIONAL SUBMITTALS

A. Construction and Operations Plan: Submit proposed methods of construction, including earthwork operations, excavation limits, slopes, fill material moisture conditioning and handling, compaction equipment, excavation support systems designs, backfilling and filling and compaction, and material sources.

1. Include additional submittal requirements related to schedule, work sequence, and on-site and off-site storage when necessary based on project conditions.
2. Submit excavation support system plan as prepared by registered Florida Professional Engineer complying with requirements stated in previous Article.

B. Submit copies of field daily reports by soil technician at the end of each workday that earthwork and grading operations occur.

C. Upon completion of earthwork and grading operations, submit an as-graded map showing density test numbers and locations, a table of density test results and depths, and a certification of compliance by geotechnical engineer in charge.

D. Qualification Data: For qualified testing agency to conduct geotechnical observation, testing and documentation. include qualifications of firm, resumes of soil technicians assigned to the project, and licensed geotechnical engineer in charge.

1. Firm Qualifications: Meet ASTM D3740.
2. Soil Technicians: Have minimum three years demonstrated experience in earthwork and grading operations and satisfy certification requirements of agency having local jurisdiction.

    a. Engineer reserves right to request substitution of soil technicians assigned to field work. Do not substitute assigned soil technicians without prior approval of The Engineer.

E. Pre-excavation Photographs or Videotape: Show existing conditions of adjoining construction and site improvements, including finish surfaces that might be misconstrued as damage caused by earthwork operations. Submit before earthwork begins.

1.8 QUALITY ASSURANCE

A. Excavation, trenching, sheeting, bracing, and similar work shall comply with requirements of OSHA excavation safety standards, 29 CFR Part 1926 Subpart P, and to the and State and local authorities having jurisdiction. Where conflict between OSHA, State and local regulations exists, apply most stringent requirements.

B. Excavation, trenching, sheeting, bracing, and similar work shall comply with requirements of the Florida "Trench Safety Act", CS/SB 2626, which incorporates by reference, OSHA excavation safety standards, 29 CFR 1926 Subpart P.

C. At least three working days prior to starting any excavation, notify the appropriate regional notification center for underground utilities and underground utility owners who are not members of notification center. To obtain area specific information for project site, refer to www.call 811.com.

D. Quality Control Testing for Off-site Borrow Materials:

1. Chemical testing will not be required where site characterization of off-site borrow sources indicates that soils are acceptable for use. If site characterization data or materials are suspected of being contaminated, perform chemical testing as directed by The Engineer with no additional compensation.
2. Chemical Test Data: Test each material source requiring testing by a person experienced in sample collection who is a registered Professional Engineer or geologist or certified groundwater or environmental professional registered in the State of Florida. Submit samples of each proposed material to a chemical analytical laboratory, certified by the governing agency, for following analyses:

    a. Volatile Organic Compounds: EPA 8240 plus Hazardous Substance List (HSL) Parameters.
    b. Acid and Base Neutral Extractable Organic Compounds: EPA 8270.
    c. Pesticides and PCBs: EPA 8080.
    d. Total Petroleum Hydrocarbons: Infrared Method, EPA 9071/418.1.
    e. Thirteen Priority Pollutant Metals: EPA 7000 Series.
    f. Total Cyanide: EPA 9012.

3. Obtain and test off-site borrow samples in accordance with criteria established by The Engineer. Submit results for review and approval prior to use on site.

1.9 FIELD CONDITIONS

A. Be responsible for construction layout and reference staking necessary for proper control and satisfactory completion of structures, cutting, filling, grading, drainage, fencing, embankment improvements, curbing, and other appurtenances.

B. Perform construction layout and staking by a Professional Surveyor or Professional Engineer registered in State of Florida where project occurs, experienced and skilled in construction layout and staking requirements.

C. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during earthwork operations.

1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.
2. Provide alternate routes around closed or obstructed traffic ways if required by Owner or authorities having jurisdiction.

D. Improvements on Adjoining Property: Authority for performing earthwork indicated on property adjoining Owner's property will be obtained by Owner before award of Contract.

1. Do not proceed with work on adjoining property until directed by Engineer.

E. Utility Locator Service: Notify 811 for area where Project is located before beginning earthwork operations.

F. Do not commence earthwork operations until temporary site fencing and erosion- and sedimentation-control measures specified are in place.

G. Do not commence earthwork operations until plant-protection measures specified are in place.

H. The following practices are prohibited within protection zones:

1. Storage of construction materials, debris, or excavated material.
2. Parking vehicles or equipment.
3. Foot traffic.
4. Erection of sheds or structures.
5. Impoundment of water.
6. Excavation or other digging unless otherwise indicated.
7. Attachment of signs to or wrapping materials around trees or plants unless otherwise indicated.

I. Do not direct vehicle or equipment exhaust towards protection zones.

J. Prohibit heat sources, flames, ignition sources, and smoking within or near protection zones.

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

A. Fill materials designated for use in this Section are specified in Section 310515 “Soils and Aggregates for Earthwork.”

B. On-Site Fill Material: Earth and rock material obtained at project site during excavation, following clearing and stripping, from which any Unsuitable Soil or Objectionable Material has been removed.

C. General: Provide imported fill materials when sufficient satisfactory soil materials are not available from excavations.

PART 3 - EXECUTION

3.1 PREPARATION

A. Protect structures, tanks, utilities, sidewalks, pavements, fencing, landscaping, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.

1. If necessary, remove and restore or replace curbing, driveway aprons, and fencing after performing backfilling work.
2. Replace existing facilities damaged by construction with new material fully equal to existing without additional compensation.

B. Prior to and During Earthwork Operations:

1. Provide, monitor, and maintain geotechnical instrumentation regarding settlement.
2. Protect and maintain erosion and sedimentation controls; coordinate with Section 312500 "Erosion and Sedimentation Controls."
3. Provide, monitor, and maintain excavation support; coordinate with Section 315000 "Excavation Support and Protection."

    a. Use excavation support system for excavations within the zone of influence for existing structures or utilities.
    b. Do not permit excavations below base level of adjacent foundations or retaining walls, unless excavation design and bracing includes an analysis of structure's stability supported by the foundation. When necessary due to project conditions, incorporate required bracing and foundation underpinning.

4. Provide, monitor, and maintain dewatering and drainage systems; coordinate with Section 312319 "Dewatering."

C. Test Pits:

1. Perform exploratory excavation work, test pits, for purpose of verifying the location of underground utilities and structures and to check for unknown utilities and structures, prior to commencing excavation work.
2. As earthwork progresses, perform test pits for the purpose of compaction testing. Pause operations and provide safe access for testing personnel.
3. Backfill and compact test pits as soon as desired information has been obtained. Stabilize backfilled surfaces in accordance with approved erosion and sedimentation control plans.

D. Clearing and Stripping. Initially clear and strip ground surfaces beneath planned structures and in areas requiring excavation or filling of organic material and debris. Do not use those materials as On-Site Fill Material unless approved by Engineer; remove from the site and properly disposed.

1. Stripping Depth Variance: 6 to 12 inches and as required for demolition.

E. Protect subgrades and foundation soils from freezing temperatures and frost. Remove temporary protection before placing subsequent materials.

F. Saw cut existing pavement with a saw, wheel, or pneumatic chisel along straight lines before excavating.

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3.2 DEWATERING AND DRAINAGE

A. Provide dewatering and drainage in accordance with Section 312319 “Dewatering.” This Article supplements those requirements.

B. Prevent surface water and ground water from entering excavations, from ponding on prepared subgrades, and from flooding Project site and surrounding area.

C. Protect subgrades from softening, undermining, washout, and damage by rain or water accumulation.

1. Reroute surface water runoff and groundwater seepage away from excavated areas. Do not allow water to accumulate in excavations. Do not use excavated trenches as temporary drainage ditches.

D. Prior to excavation, verify groundwater will be at required level indicated on approved dewatering and drainage submittal.

E. Accomplish dewatering by methods that preserve undisturbed state of subgrade soils. Dewater in a manner to prevent boiling, detrimental under-seepage, or disturbance at excavation base.

3.3 SUPPORT OF EXCAVATION

A. Provide excavation support in accordance with Section 315000 “Excavation Support and Protection.” This Article supplements those requirements.

B. Install excavation support in accordance with reviewed Shop Drawings prior to beginning excavation work. Maintain excavation supports that are required to remain in place, if applicable, as indicated on Drawings or as required by approved Shop Drawings.

C. Owner or Engineer may direct that certain excavation supports remain in place or be cut off at any specific elevation. Supports directed by Owner or Engineer to be left in place and not so designated on Contract Documents will be paid for according to Contract provisions for unit prices.

D. The right of Owner or Engineer to direct that certain excavation supports remain in place shall not be construed as creating any obligation on Owner or The Engineer to give such direction, nor shall failure to give such direction relieve the Contractor from liability for damages to persons or property occurring from or upon the work occasioned by negligence or otherwise, growing out of a failure on the part of the Contractor to leave in place sufficient excavation supports to prevent any movement of the ground or damage to adjacent structures.

E. Construct temporary excavation slopes in accordance with the requirements of OSHA excavation safety standards and approved Shop Drawings.

F. Where allowed, carefully remove excavation supports in a manner without endangering the Work or other adjacent structures, utilities, or property. Immediately fill voids left or caused by withdrawal of supports with sand and compact.

3.4 EXCAVATION

A. Include material of every description and of whatever substance encountered as an unclassified excavation.

B. General: Excavate on-site soils using standard earthmoving equipment. Excavation in dense soil or rock may require special equipment. Do not plough, scrape, or dig earth with machinery so near to finished subgrade to result in excavation of or disturbance of below grade material.

C. Make excavations to grades indicated on Drawings and in widths sufficient for laying of pipe, construction of the structure, installing bracing, excavation supports, dewatering and drainage facilities, and working clearances.

D. Perform excavation in-the-dry and accomplished by methods which preserve the natural undisturbed condition of subgrade soils.

E. Moisture Sensitive Soils: Use a smooth-edge bucket to excavate last one foot of depth when excavation is to end in such soils.

F. If excavation bottom is removed below the limits shown on Drawings, specified, or directed by the Engineer, refill with structural fill, screened gravel, crushed stone, or other material satisfactory to The Engineer without additional compensation.

G. When excavation has reached prescribed depths, notify the Engineer who will observe the conditions. If materials and conditions are not satisfactory, the Engineer will issue instructions for corrective procedures. Engineer will be the sole judge as to whether the work has been accomplished satisfactorily.

H. Subgrade soils that have become soft, loose, quick, or otherwise unsatisfactory due to inadequate excavation, dewatering, or other construction methods in the opinion of The Engineer, remove existing soil and replaced with ,structural fill, crushed stone or other material acceptable to The Engineer at Contractor's expense.

I. Exposed subgrades shall be proof rolled with at least two overlapping coverages of a vibratory drum roller with a minimum static drum weight of 10 tons. Conduct proof-rolling in presence of the Engineer. The Engineer will waive this requirement, if in its opinion the subgrade will be rendered unsuitable by such proof-rolling.

    1. Confined Areas: Proof-roll with hand operated vibratory equipment that is approved by The Engineer.

J. Perform overexcavation at The Engineer’s request to remove unsuitable soil, objectionable material, or other materials as determined by The Engineer and to such depth and width as directed. Replace with suitable material as directed by The Engineer.

    1. Authorized additional excavation and replacement material will be paid for according to Contract provisions for unit prices.

K. Perform excavation for pipelines beneath structures and excavation for footings with excavating equipment operating from the subgrade for the structure, while in-the-dry and in a manner preserving the undisturbed state of subgrade soils.

L. When excavations have reached the required subgrade, including any allowances for working mats or base materials and prior to their placement, notify soils testing laboratory to verify suitability of existing subgrade soils for anticipated foundation and structural loadings.

1. If existing subgrade soils are determined to be unsuitable, follow direction provided by The Engineer regarding removal and replacement with suitable materials.
2. Notify Engineer if the revised work scope would modify Contractor's cost and thereby entitle a change to the Contract Sum. Authorized additional excavation and replacement material will be paid for according to Contract provisions for unit prices.

M. Replace overexcavation beyond the limits and depths required by Contract Documents using structural fill, screened gravel, crushed stone or other material satisfactory to Engineer without additional compensation.

N. Trenches in Tree- and Plant-Protection Zones:

1. Hand-excavate to indicated lines, cross sections, elevations, and subgrades. Use narrow-tine spading forks to comb soil and expose roots. Do not break, tear, or chop exposed roots. Do not use mechanical equipment that rips, tears, or pulls roots.
2. Do not cut main lateral roots or taproots; cut only smaller roots that interfere with installation of utilities.
3. Cut and protect roots.

3.5 SUBGRADE PREPARATION

A. Notify Engineer when excavations have reached required subgrade.

B. Maintain excavated subgrade in-the-dry condition.

C. Prior to fill placement, remove objectionable material which includes, but not be limited to, pavement, topsoil, organic matter, contaminated soil, construction debris, perishable materials, snow, ice, frozen earth, and rocks or lumps of cemented soils over 6 inches (152 mm) in maximum dimension.

D. For subgrades consisting of granular soils, proof roll the final subgrade using at least four coverages of a vibrator plate compactor.

E. Where existing subgrade contains a significant amount of clay or cohesive soils, over-excavate sufficiently below the bottom of structure for placement of a lean concrete working mat. Remove loose or soft material from the subgrade immediately prior to placing lean concrete working mat.

F. Remove and replace soft subgrades or unusable material with structural fill, screened gravel, crushed stone or other material satisfactory to the Engineer.

G. During wet or freezing weather, or in areas where exposed subgrade consists of moisture-sensitive soils, take measures to protect foundation excavations once they have been approved by The Engineer. Protective measures include, but are not limited to, placing insulation blankets, placing a layer of fill, pea gravel, crushed rock, or lean concrete on the exposed subgrade, or covering the exposed subgrade with a plastic tent.

1. If additional over excavation is required due to the subgrade not being protected against wet or freezing weather, perform additional work without additional compensation.

H. Notify Engineer to observe conditions following subgrade preparation and prior to fill placement. If existing subgrade soils are determined to be unsuitable, follow direction provided by The Engineer regarding removal and replacement with suitable materials.

1. Authorized additional excavation and replacement material will be paid for according to Contract provisions for unit prices.

3.6 STORAGE OF SOIL MATERIALS

A. Stockpile borrow soil materials and excavated satisfactory soil materials without intermixing. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust. Protect from precipitation.

1. Stockpile soil materials away from edge of excavations. Do not store within drip line of remaining trees.

3.7 FILL PLACEMENT AND COMPACTION PROCEDURES

A. Fill and Backfill: Place materials in lifts to suit specified compaction requirements to required lines and grades, making allowances for settlement and placement of cover materials, such as topsoil or sod. Correct soft spots or uncompacted areas.

B. Do not place or compact fill and backfill when materials are too wet to properly compact.

1. In-place Soil Moisture Content: Maximum of three percentage points above optimum moisture content of soil, as determined by laboratory test of moisture-density relation appropriate to specified level of compaction.

C. Structural Fill and Embankment Fill: Construct to required lines and grades, making allowances for settlement and placement of cover materials, such as topsoil and sod. Correct soft spots or uncompacted areas.

D. Fill material shall be free of snow, ice, frost, and frozen earth. Do not place fill materials on frozen surfaces or surfaces covered by snow, ice, or frost.

E. Complete structure water-tightness tests and installation of damp proofing or waterproofing systems prior to placing various types of fill or backfill around structures.

F. If subgrade slopes more than 10 percent, step subgrade to produce a stable, horizontal surface for placement of fill materials. Scarify existing subgrade slope to a depth of at least 6 inches (150 mm).

G. Compact filled slopes by slope rolling and trimming, or overfill and trim back to plan grade to expose a firm, smooth surface free of loose material.

H. Do not allow fill lifts to contain stones with a dimension larger than 2/3 the specified loose measure lift thickness.

I. Perform compaction in open areas using compaction equipment by any of the following methods:

1. Fully loaded ten-wheel trucks or front-end loaders.
2. Tractor dozers weighing minimum of 30,000 pounds (13,600 Kg).
3. Heavy vibratory rollers.

J. Confined Compaction: Perform compaction in confined areas, including areas within a 45-degree angle extending upward and outward from the base of a wall, and in areas where the use of large equipment is impractical, using hand-operated vibratory equipment or mechanical tampers.

1. Do not exceed lift thickness of 6 inches (150 mm) or 1/2 the specified lift thickness (whichever is less), measured before compaction, when using hand operated equipment.

K. Moisture condition on-site fill material prior to placement, unless Contractor demonstrates to The Engineer in-place moisture conditioning methods can achieve the required moisture content.

L. Conduct compaction of each specified lift of fill materials by a minimum of four complete coverages with acceptable compaction equipment to a specified density as a percentage of maximum dry density as determined by ASTM D1557 or AASHTO T-180, unless otherwise specified.

M. Use structural fill required beneath foundations or slabs on grade, except sidewalks. Place and compact structural fill in even lifts having a maximum thickness of 8 inches (200 mm), measured before compaction.

N. Use select fill and backfill material placed within 10 feet (3 meters) of all structures. Uniformly place and compact select fill around the structure in even lifts having a maximum thickness of 8 inches (200 mm), measured before compaction.

O. Use common fill in areas beyond those designated for structural fill or select fill, unless shown or otherwise specified. Place in even lifts having a maximum thickness of 12 inches (300 mm), measured before compaction.

P. Place impervious fill in controlled, even lifts having a maximum thickness (measured before compaction) of 6 inches (150 mm).

1. Permeability: Compact to attain a reading of less than 1×10^{-7} cm/sec.

2. Moisture Content: Compact to optimum moisture content of minus 2 percent to plus 3 percent.

3.8 COMPACTION REQUIREMENTS

A. Perform in-place testing of compacted fill lifts to measure in-place density and water content according to ASTM D1557 or AASHTO T-180.

B. Beneath Foundations and Slabs-on-Grade, except sidewalks: Compact top 12 inches (300 mm) of existing subgrade and each layer of fill, if applicable to:

1. Maximum Dry Density: Minimum of 98 percent for ASTM D1557 or AASHTO T-180.
2. Moisture Content: At or near its optimum moisture content of minus 2 percent to plus 3 percent.

C. Area Around Structures: Within 10 feet, compact each fill or backfill layer to:

1. Maximum Dry Density: Minimum of 95 percent for ASTM D1557 or AASHTO T-180.
2. Moisture Content: At or near its optimum moisture content of minus 2 percent to plus 3 percent.

D. Embankments, Lawn, or Unimproved Areas: Does not include embankments under roadways and earth dam structures. Compact each fill or backfill layer to:

1. Maximum Dry Density: Minimum of 95 percent for ASTM D1557 or AASHTO T-180.
2. Moisture Content: At or near its optimum moisture content of minus 1 percent to plus 4 percent.

E. Sidewalks: Compact each fill layer to:

1. Maximum Dry Density: Minimum of 95 percent for ASTM D1557 or AASHTO T-180.
2. Moisture Content: At or near its optimum moisture content of minus 2 percent to plus 3 percent.

F. Roads, Paved Areas, and Roadway Embankments: Compact layers of fill or backfill to:

1. Upper 12 inches Maximum Dry Density: Minimum of 98 percent for ASTM D1557 or AASHTO T-180.
2. Lower 12 inches Maximum Dry Density: Minimum of 95 percent for ASTM D1557 or AASHTO T-180.
3. Outside of the paved areas Maximum Dry Density: Minimum of 95 percent for ASTM D1557 or AASHTO T-180.
4. Moisture Content: At or near its optimum moisture content of minus 2 percent to plus 3 percent.

3.9 DISPOSAL OF UNSUITABLE, WASTE, AND SURPLUS EXCAVATED MATERIALS

A. Unsuitable soil, objectionable material, waste, and surplus excavated material shall be removed and disposed of off-site. Materials may be temporarily stockpiled in an area within the limits of

construction that does not disrupt construction activities, create any nuisances or safety hazards, or otherwise restricts access to work site.

B. Topsoil or loam excavated under this Section may be salvaged for use as specified under Section 329200 “Turf and Grasses,” as approved by Engineer.

3.10 GRADING

A. Perform grading to lines and grades shown on Drawings. Remove objectionable materials encountered within the limits indicated and disposed of off-site. Completely and continuously drained and dewatered subgrades throughout the grading process. Install temporary drains and drainage ditches to intercept or divert surface water that may affect the execution or condition of grading work.

B. If it is not possible at the time of grading to place material in its proper section of the Work, stockpile it in approved areas for later use. No additional compensation will be made for stockpiling or double handling of excavated materials.

C. In cut areas, remove loose or protruding rocks in slopes to line or finished grade of the slope. Uniformly dress, cut, and fill slopes to slope cross-section and alignment shown on Drawings, unless otherwise directed by the Engineer.

3.11 RIPRAP AND SLOPE STABILIZATION

A. Prior to installation of riprap, install erosion control blankets on slopes in accordance with manufacturer's instructions.

1. Properly prepare area to be covered before the blanket is applied.
2. When the blanket is unrolled, place netting on top with fibers in contact with the soil over the entire area.
3. Butt blankets snugly at ends and sides, placing blankets a minimum of three rows, each four-foot wide, for a total width of 12 feet (3 meters).
4. Staple blankets together in accordance with manufacturer's instructions.
5. Secure blankets by driving staple vertically into the ground, spaced approximately 6 feet (1.5 meters) apart, on each side and one row in the center, alternately spaced between each side.
6. Do not overlap adjoining blankets. Utilize a common row of staples to attach to ground.

B. Place riprap in conjunction with embankment construction with only sufficient lag in construction of riprap protection necessary to allow for proper construction of the portion of embankment protected and to prevent mixture of embankment and riprap material.

1. Place and grade bank run gravel to a depth of 6 inches to obtain a continuous uninterrupted bed of required thickness within the required limits.
2. Compact by a minimum one coverage by a crawler-type tractor with a total weight, including blade and equipment, of not less than 30,000 pounds.

C. Hand-place riprap on compacted gravel bed; do not dump materials. Lay stones so maximum dimension is perpendicular to the bed. Place stones so weight of each stone is carried by

underlying material and not by adjacent stones. Place large stones at the bottom of slope. Fill spaces between stones with spalls of suitable size to construct a solid, stable slope, free from large voids and defects, and to protect embankments against erosion.

3.12 FIELD QUALITY CONTROL

A. Test and observe materials as described in this Article. Cooperate by allowing free access to work for selection of test materials and observations.

B. General Testing Requirements:

1. At Structures: Prior to placement of bedding material, concrete work mats, structural fill or structural concrete, coordinate with CDM Smith's Geotechnical Services Division to verify suitability of existing subgrade soil.
2. Backfill and Fill: Prior to and during the placement of backfill and fill coordinate with CDM Smith's Geotechnical Services Division to perform in-place soil density tests to verify that backfill and fill material has been placed and compacted in accordance with specified compaction requirements.

    a. Provide minimum 48 hours' notice prior to placement of backfill and fill.

3. Subgrade: Do not cover with fill without observation, testing, and approval by CDM Smith's Geotechnical Services Division.

    a. Earthwork activities performed without properly scheduled inspection are subject to removal and replacement or additional testing as directed by The Engineer without additional compensation.

C. Test materials by a certified independent laboratory, engaged by Contractor and acceptable to The Engineer, demonstrating conformance with project requirements. Deliver test reports and material certifications to The Engineer before using any material in the work.

1. Contractor will make payment for laboratory and in place density testing.

D. If field test results are not in conformance with project requirements, costs involved in correcting deficiencies in compacted materials to satisfaction of The Engineer without additional compensation.

E. Earthwork activities performed without properly scheduled inspection are subject to removal and replacement or additional testing as directed by The Engineer without additional compensation.

F. Testing methods shall comply with latest ASTM or equivalent AASHTO Standards applicable during bidding.

G. During placement of bedding, backfill, and fill, perform in-place soil density testing to confirm that fill material has been compacted in accordance with project requirements. The Engineer may designate areas to be tested. Notify Engineer at least 72 hours in advance of scheduled compaction testing. Submit a plan drawing showing the locations of the field tests. In place soil

density tests on backfill and fill material shall be as required by authorities having jurisdiction, project geotechnical report, but in no instance, shall less than those listed:

1. Structures and Embankments: At least one density and moisture content test for each 2,500 square feet of surface area for each lift of fill at embankment, structure, and manhole locations.
2. Trench Excavations: At least one nuclear density and one moisture content test at a maximum of 50 feet intervals for each lift of fill placed or as directed by The Engineer.
3. The Engineer may designate supplemental areas to be tested at additional compensation.

H. Materials which have been previously tested may be subjected to further testing from time to time and may be rejected, if it is determined that results do not conform to project requirements. Immediately remove rejected materials when directed by The Engineer, notwithstanding results of previous testing.

I. The Engineer or Owner may conduct additional soil testing. Cooperate fully in allowing additional test to be made, including free access to the work.

J. Geotechnical Testing Agency Qualifications: Qualified according to ASTM E329 and ASTM D3740 for testing indicated.

3.13 PROTECTION

A. Protecting Graded Areas: Protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris.

B. Repair and reestablish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or where they lose compaction due to subsequent construction operations or weather conditions.

1. Scarify or remove and replace soil material to depth as directed by the Engineer; reshape and recompact.

C. Where settling occurs before Project correction period elapses, remove finished surfacing, backfill with additional soil material, compact, and reconstruct surfacing.

1. Restore appearance, quality, and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to greatest extent possible.

END OF SECTION 312000

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SECTION 312319 - DEWATERING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes:

1. Construction dewatering and surface water control and incorporates the design, equipment, materials, installation, operation, protection, monitoring and removal of dewatering and drainage system. Provide dewatering system sufficient to lower groundwater and collect surface water, regardless of groundwater level or rainfall at any time during the work.
2. Delegated Design.
3. Obtain and pay for permits required for dewatering and drainage systems. Implement measurements to comply with dewatering and discharge permits requirements.

B. Related Requirements:

1. Section 310515 “Soils and Aggregates for Earthwork” for soil and aggregate materials.
2. Section 312333 “Trenching and Backfilling” for trenching, backfilling, and compaction.
3. Section 315000 “Excavation Support and Protection” for temporary excavation support systems.

1.3 DEFINITIONS

A. In-the-Dry: An excavation subgrade where all of the following are met:

1. Groundwater level has been lowered to at least 2 feet below lowest excavation level.
2. Subgrade is stable with no ponded water, mud, or muck.
3. Subgrade is able to support construction equipment without rutting or disturbance.
4. Subgrade is suitable for placement and compaction of fill material, pipe, or concrete foundations.

B. Contractor’s Engineered Design: Design prepared on behalf of Contractor by a licensed Professional Engineer.

C. Professional Engineer: Professional Engineer licensed in the State of Florida meeting project qualifications and who is hired by Contractor.

D. The Engineer: Engineer hired by Owner.

1. Approvals given by the Engineer shall not relieve Contractor of its responsibilities for performing the work in accordance with Contract Document requirements.

1.4 DELEGATED DESIGN SUBMITTALS

A. Design Plan: Submit written dewatering and drainage system design plan, prepared by a Professional Engineer licensed in the State of Florida, that includes:

1. Description of proposed dewatering system and installation methods to be used for system elements and observation wells.
2. Description of equipment, drilling methods, holes sizes, filter sand placement techniques, sealing materials, development techniques, number and location of dewatering points and observations wells.
3. Dewatering system design calculations demonstrating that the proposed system meets all requirements herein and elsewhere.
4. Sequence of well and well-point placement coordinated with support of excavation system installation and control procedures to be adopted if dewatering problems arise.
5. Identification of anticipated area influenced by dewatering system and address impacts to adjacent existing and proposed structures.
6. Coordinate dewatering and drainage submittals with excavation and support of excavation submittals.

B. Shop Drawings: For dewatering system, prepared by a Professional Engineer licensed in the State of Florida.

1. Include plans, elevations, sections, and details.
2. Show arrangement, locations, and details of wells and well points; locations of risers, headers, filters, pumps, power units, and discharge lines; and means of discharge, control of sediment, and disposal of water.
3. Include pump capacity and anticipated discharge rate.
4. Include layouts of piezometers and flow-measuring devices for monitoring performance of dewatering system.
5. Show areas and depths of excavation to be dewatered and adjacent structures or facilities within the anticipated area influence.

1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer, land surveyor, and Professional Engineer licensed in the State of Florida.

B. Field quality-control reports.

C. Existing Conditions: Using photographs or video recordings, show existing conditions of adjacent construction and site improvements that might be misconstrued as damage caused by dewatering operations. Submit before Work begins.

D. Record Drawings: Identify locations and depths of capped wells and well-points and other abandoned-in-place dewatering equipment.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: An experienced installer that has specialized in dewatering work and having a minimum of 5 years' experience.

B. Professional Engineer Qualifications: Professional Engineer licensed in the State of Florida; having a minimum of 5 years' experience in design and construction of dewatering and drainage systems; and having completed not less than 5 successful dewatering and drainage projects of equal type, size, and complexity to that required for the work.

C. Comply with authorities having jurisdiction for the following:

1. Drilling and abandoning of wells used for dewatering systems.
2. Water discharge and disposal from dewatering operations.

1.7 FIELD CONDITIONS

A. Project-Site Information: Geotechnical data has been prepared for this Project and is available for information only. Owner is not responsible for interpretations or conclusions drawn from this data.

1. Make additional test borings and conduct other exploratory operations necessary for dewatering according to the performance requirements.
2. Groundwater levels may vary during the work and should not be assumed to be accurately represented by groundwater level readings reported in the geotechnical report.
3. The geotechnical data is included elsewhere in Project Manual.

B. Survey Work: Engage qualified land surveyor or Professional Engineer to survey adjacent existing buildings, structures, and site improvements; establish exact elevations at fixed points to act as benchmarks. Clearly identify benchmarks and record existing elevations.

PART 2 - PRODUCTS

2.1 PERFORMANCE AND DESIGN CRITERIA

A. Dewatering Performance: Design, furnish, install, test, operate, monitor, and maintain dewatering system of sufficient scope, size, and capacity to control hydrostatic pressures and to lower, control, remove, and dispose of surface and ground water and permit excavation and construction to proceed in-the-dry in accordance with the requirements herein and elsewhere.

1. Design dewatering system, including comprehensive engineering analysis by the Contractor's Design Engineer.
2. Continuously monitor and maintain dewatering operations to ensure required groundwater lowering, erosion control, stability of excavations, excavation support, and constructed slopes, prevention of flooding in excavation, and prevention of damage to subgrades and permanent structures.
3. Prevent surface water from entering excavations by grading, dikes, or other means.

4. Accomplish dewatering without damaging existing buildings, structures, and site improvements adjacent to excavation.
5. Remove dewatering system when no longer required for construction.

B. Primary Purpose of Work: Preserve natural undisturbed condition of subgrade soils in areas of proposed excavations.

1. Prior to excavation, lower groundwater to at least 2 feet below lowest excavation subgrade elevation.
2. Additional groundwater lowering may be necessary beyond 2-foot requirement, depending on construction methods, equipment used, and prevailing groundwater and soil conditions. Lower groundwater as necessary to complete construction in accordance with Contract Documents without additional compensation.

C. Design deep wells, well-points and sumps, and other groundwater control system components to prevent loss of fines from surrounding soils. Use sand filters with dewatering installations unless screens are properly sized by Contractor's Design Engineer to prevent passage of fines from surrounding soils.

D. Maintain standby pumping systems and sources of standby power at various sites.

E. Design dewatering system to prevent damage to adjacent properties, buildings, structures, utilities, and facilities from dewatering operations. Be responsible for damage to properties, buildings or structures, sewers and other utility installations, pavements, and work that may result from dewatering or surface water control operations.

F. Regulatory Requirements: Comply with governing permits and regulations before beginning dewatering. Comply with water- and debris-disposal regulations of authorities having jurisdiction.

2.2 MATERIALS

A. Pipe for Observation Wells: ASTM D1785, PVC Schedule 40 in minimum interior diameter of 1-inch and machine slotted having a maximum slot size of 0.020-inch.

B. Equipment: Piping, pumping, and other equipment and materials to provide control of surface water and groundwater in excavations.

C. Grout: Mixture of portland cement and bentonite clay or sand suitable for sealing abandoned wells and piping.

PART 3 - EXECUTION

3.1 GENERAL

A. Control surface water and groundwater such that:

1. Excavation to final grade is made in-the-dry.
2. Natural undisturbed conditions of subgrade soils are maintained.

3. Softening, instability, or disturbance due to presence or seepage of water does not occur.
4. Construction and backfilling proceeds in-the-dry.
5. Floatation of completed portions of work shall be prohibited.

B. Methods of groundwater control may include but are not limited to trenches and sump pumping, perimeter groundwater cutoff, well points, ejectors, deep wells, or any combination.

C. Where groundwater levels are above proposed bottom of excavation level, provide a pumped dewatering system for pre-drainage of soils prior to excavation and for maintaining lowered groundwater level until construction has been completed such that structure, pipeline, or fill will not be floated or otherwise damaged.

D. Vary type of system, spacing of dewatering units, and other details of the work depending on soil and water conditions at each location.

E. Do work in a manner to protect adjacent structures and utilities without causing loss of ground or disturbance to pipe bearing soils or soils supporting overlying or adjacent structures.

F. Install, monitor, and report data from observation wells. Evaluate collected data relative to groundwater control system performance and modify systems necessary to dewater site.

G. Locate groundwater control system components where they will not interfere with construction activities adjacent to the work area or interfere with installation and monitoring of geotechnical instrumentation including observation wells. Do not make excavations for sumps or drainage ditches within or below 1H:1V slopes extending downward and out from edges of existing or proposed foundation elements or from downward vertical footprint of pipe without approval by the Engineer.

3.2 PREPARATION

A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by dewatering operations.

1. Prevent surface water and subsurface or groundwater from entering excavations, from ponding on prepared subgrades, and from flooding site or surrounding area.
2. Protect subgrades and foundation soils from softening and damage by rain or water accumulation.

B. Install dewatering system to ensure minimum interference with roads, streets, walks, and other adjacent occupied and used facilities.

1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction. Provide alternate routes around closed or obstructed traffic ways, if required by authorities having jurisdiction.

C. Provide temporary grading to facilitate dewatering and control of surface water.

D. Protect and maintain temporary erosion and sedimentation controls in accordance with all permits during dewatering operations.

3.3 INSTALLATION

A. Install dewatering system utilizing wells, well-points, or similar methods complete with pump equipment, standby power and pumps, filter material gradation, valves, appurtenances, water disposal, and surface water controls.

1. Space well-points or wells at intervals required to provide sufficient dewatering.
2. Use filters or other means to prevent pumping of fine sands or silts from the subsurface.

B. Place dewatering system into operation to lower water to specified levels before excavating below groundwater level.

C. Provide sumps, sedimentation tanks, and other flow-control devices as required by authorities having jurisdiction.

D. Provide stand-by equipment on-site, installed and available for immediate operation, to maintain dewatering on continuous basis if any part of system becomes inadequate or fails.

3.4 SURFACE WATER CONTROL

A. Construct surface water control measures, including dikes, ditches, sumps and other methods to prevent flow of surface water into excavations and to allow construction to proceed without delay.

B. Grade excavation to divert surface water and seepage water within excavation areas into sumps and dewatering wells.

3.5 EXCAVATION DEWATERING

A. Provide and maintain equipment and facilities to promptly remove and properly dispose of water entering excavations. Maintain excavations in-the-dry.

B. Excavation dewatering shall maintain the subgrade in a natural undisturbed condition and be in operation until the fill, structure or pipes to be built thereon have been completed to such extent that they will not be floated or otherwise damaged by allowing water levels to return to natural elevations.

C. Do not place pipe, masonry, and concrete in water or submerge within 24 hours after being installed. Prevent water from flow over new masonry or concrete within four days after placement.

D. Prevent water from rising to cause unbalanced pressure on structures until concrete or mortar has set at least 24 hours. Prevent pipe flotation by promptly placing backfill.

E. Conduct dewatering to preserve natural undisturbed condition of subgrade soils at bottom of excavation.

F. If trench subgrade or excavation bottom becomes disturbed due to inadequate dewatering or drainage, excavate below normal grade as directed by Engineer and re-fill with structural fill, crushed stone, or other material as approved by Engineer without additional compensation.

G. It is expected that initial dewatering plan may be modified to suit variable soil and groundwater conditions encountered. Dewater and excavate in a manner without causing loss of ground or disturbance to pipe bearing soil or soil that supports overlying or adjacent structures.

H. If methods do not properly dewater excavation, install additional groundwater observation wells as directed by Engineer. Do not place pipe or structure until readings obtained from observation wells indicate that groundwater has been lowered to specified minimum of below bottom of final excavation.

I. Surround dewatering units with suitable filter sand with no fines being removed by pumping. Pump continuously from dewatering system until pipe or structure is adequately backfilled. Provide stand-by pumps.

J. Collect water entering excavations from precipitation or surface runoff in shallow ditches around excavation perimeter, drained to a sump, and pump from excavation to maintain a bottom free from standing water.

K. Dispose of drainage in accordance with all applicable permits. Do not use existing or new sanitary sewers to dispose of drainage.

3.6 WELL POINT SYSTEMS

A. Where necessary, install a vacuum well-point system around excavation for dewatering purposes. Surround each well point and riser pipe by a sand filter. Use sand of gradation that after initial development of well points, quantity and size of soil particles discharged shall be negligible. Provide well point systems capable of operating continuously under highest possible vacuum. Include sufficient valves and gauges to accurately monitor and control the system. Develop and re-develop well points to provide reliable performance throughout the duration of the work.

B. Install well-point systems in Engineer’s presence according with approved submittal.

3.7 DEEP WELLS

A. Where necessary, install a deep well system around an excavation to dewater it. Surround each well with a sand or gravel filter having adequate gradation so quantity and size of soil particles discharged are negligible. Install sufficient number of wells to lower groundwater level allowing excavation to proceed in-the-dry. Develop and redevelop wells as necessary to provide reliable performance throughout the duration of the work.

B. Install deep wells in Engineer’s presence according with approved submittal.

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3.8 OBSERVATION WELLS

A. Install observation wells to monitor groundwater levels beneath and around excavated areas until adjacent structures and pipelines are completed and backfilled.

B. Observation Well Locations and Depths:

1. Locate in critical areas with respect to groundwater control to monitor performance of dewatering systems as determined by Delegated Design.
2. Install observation wells to:

    a. Minimum depth of 10 feet below deepest level of excavation, unless otherwise approved by the Engineer.
    b. Depth necessary to indicate that groundwater control system designed under Delegated Design is performing as intended.

3. Provide additional observation wells required by Engineer if deemed necessary to monitor performance of groundwater control system without additional compensation.
4. Locations and depths are subject to approval by Engineer.

C. Protect observation wells at ground surface by providing a lockable box or outer protective casing with lockable top and padlock. Design surface protection to prevent damage by vandalism, construction operations, and surface water infiltration.

1. Provide two copies of padlock keys at each well for the Engineer’s access.
2. Develop observation wells to provide a reliable indication of groundwater levels. Re-developed wells: if well clogging is observed; in event of apparent erroneous readings; or as directed by the Engineer.
3. Submittal observation well installation logs, top of casing elevation, and well locations to the Engineer within 24 hours of completing well installation.

D. Observation Well Maintenance:

1. Maintain each observation well until adjacent structures and pipelines are completed and backfilled. Clean out or replace any observation well which ceases to be operable before adjacent work is completed.
2. Repair or replace wells without additional compensation, whether damage is caused by Contractor's operations or third parties.

E. Monitoring and Reporting of Observation Well Data:

1. Begin daily monitoring of groundwater levels in work areas prior to initial operation of drainage and dewatering system. Continue daily monitoring in areas where groundwater control is in operation until time that adjacent structures and pipelines are completed and backfilled or until time that groundwater control systems are turned off.
2. Be responsible for processing and reporting observation well data to the Engineer on a daily basis. Provide data to the Engineer on a form that includes following information: observation well number, depth to groundwater, total depth of well, top of casing elevation, groundwater level elevation, and date and time of reading.

F. Keep groundwater level at a minimum of 2 feet below lowest subgrade level for a given excavation.

3.9 REMOVAL OF SYSTEMS

A. At completion of excavation and backfilling work and when approved by the Engineer, remove from site various pipe, deep wells, well-points, pumps, generators, observation wells, other equipment, and accessories used for groundwater and surface water control systems.

1. Removed materials and equipment become property of Contractor.

B. Restore areas disturbed by installation and removal of groundwater control systems and observation wells to their original condition.

C. Leave in place deep wells casings, well-points, and observation wells located:

1. Within plan limits of structures or pipelines.
2. Within zone below 1H:1V planes extending downward and out from edges of foundation elements or from downward vertical footprint of pipe.
3. Where removal would result in ground movements causing adverse settlement to adjacent ground surface, utilities, or existing structures.

D. Fill pulled casings holes with cement grout. Where left in place, fill casings with cement grout and cut off a minimum of 3 feet below finished ground level or 1 foot below foundation level to prevent interference with finished structures or pipelines.

E. When directed by Engineer, leave observation wells in place for continued monitoring. Cut casings flush with final ground level when directed and provide protective lockable boxes with locking devices. Provide protective boxes suitable for traffic and other conditions to which observation wells will be exposed.

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SECTION 312323.33 - FLOWABLE FILL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

B. All work shall comply and be installed per the latest Florida Department of Transportation Standard Specifications for Road and Bridge Construction (FY 2024-2025 or later), including Section 121 Flowable Fill, and the latest City of Titusville Engineering Services Department Detail Standards and Specifications (May 2009 or later).

1.2 SUMMARY

A. Section Includes:

1. Flowable fill for:

a. Utility trench backfill.
b. Abandoning existing structures and utility lines in place.

B. Related Requirements:

1. Section 333113 "Public Sanitary Utility Sewerage Piping" for utility service sanitary sewer piping and bedding.

1.3 DEFINITIONS

A. Utility: Any buried pipe, duct, conduit, tank, or cable.

B. Structure: Manhole, vault, subgrade building foundation.

C. Excavatable Flowable Fill: Lean cement concrete fill used where future excavation may be required, such as fill for utility trenches, bridge abutments, and culverts.

D. Non-excavatable Flowable Fill: Lean cement concrete fill used where future excavation is not anticipated, such as fill below structure foundations and filling abandoned structures.

1.4 INFORMATIONAL SUBMITTALS

A. Field Quality-Control Submittals:

1. Mix Design:

a. Furnish flowable fill mix design for each specified strength.
b. Furnish separate mix designs when admixtures are required for the following:

1) Flowable fill Work during hot and cold weather.
2) Air entrained flowable fill Work.

c. Identify design mix ingredients, proportions, properties, admixtures, and tests.
d. Sieve analysis of aggregate.

2. Furnish test results to certify flowable fill mix design properties meet or exceed specified requirements.

B. Delivery Tickets:

1. Furnish duplicate delivery tickets indicating actual materials delivered to Project Site.

1.5 QUALITY ASSURANCE

A. Perform Work according to City of Titusville and Florida Department of Transportation standards.

B. All testing and inspection services required, unless otherwise specified, shall be provided and paid for by Contractor. Testing necessary to establish the mix shall be performed by and at the expense of Contractor. Methods of testing shall comply with the latest applicable ASTM Methods except as specified herein.

1.6 ENVIRONMENTAL REQUIREMENTS

A. Store or stockpile fly ash, aggregate and cement in conformity with recommendations of ACI 301.

B. Minimum Conditions: Do not install flowable fill during inclement weather or when ambient temperature is less than 40 degrees F (4 degrees C).

1.7 FIELD MEASUREMENTS

A. Verify field measurements before installing flowable fill to establish quantities required to complete the Work.

PART 2 - PRODUCTS

2.1 FLOWABLE FILL

A. Excavatable Flowable Fill:

1. Excavatable type flowable fill shall be used unless specifically indicated otherwise on the drawings.
2. Furnish materials according to City of Titusville standards.

B. Non-excavatable Flowable Fill:

1. Non-Excavatable type flowable fill shall be provided only when specifically indicated on the drawings.
2. Furnish materials according to Florida Department of Transportation standards.

2.2 ADMIXTURES

A. Furnish materials according to Florida Department of Transportation standards.

2.3 MIXES

A. Mix and deliver flowable fill according to ASTM C94/C94M, Option C.
B.

B. Provide water content in design mix to produce self-leveling, flowable fill material at time of placement.

C. Design mix air entrainment and unit mass are for laboratory design mix and source quality control only.

2.4 SOURCE QUALITY CONTROL

A. Test properties of flowable fill design mix and certify results for the following:

1. Design mix proportions by weight of each material.
2. Aggregate: ASTM C33 for material properties and gradation.
3. Properties of plastic flowable fill design mix including:

    a. Temperature.
    b. Slump.
    c. Air entrainment.
    d. Wet unit mass.
    e. Yield.
    f. Cement factor.

4. Properties of hardened flowable fill design mix including:

    a. Compressive strength at 1 day, 7 days, and 28 days. Report compressive strength of each specimen and average specimen compressive strength.
    b. Unit mass for each specimen and average specimen unit mass at time of compressive strength testing.

B. Prepare delivery tickets containing the following information:

1. Project designation.
2. Date.
3. Time.
4. Class and quantity of flowable fill.
5. Actual batch proportions.
6. Free moisture content of aggregate.
7. Quantity of water withheld.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify excavation is complete.

B. Verify utility installation is complete and tested before placing flowable fill.

C. Verify excavation is dry and dewatering system (if present) is operating.

3.2 PREPARATION

A. Support and restrain utilities to prevent movement and flotation during installation of flowable fill.

B. Protect structures and utilities from damage caused by hydraulic pressure of flowable fill before fill hardens.

C. Protect utilities to prevent intrusion of flowable fill.

3.3 INSTALLATION - UTILITY TRENCH BACKFILL

A. Engineer approval required for the condition of subgrade and method of placement.

B. Remove all debris and foreign matter from the excavation before depositing flowable fill.

C. Do not place flowable fill in water or submerge within 24 hours after placing.

D. Place flowable fill per City of Titusville standards.

3.4 INSTALLATION - FILLING ABANDONED UTILITIES AND STRUCTURES

A. Verify pipes and conduits are not clogged and are sufficiently empty to permit gravity installation of flowable fill for entire length indicated to be filled.

B. Seal lower end of pipes and conduits by method to contain flowable fill and to vent trapped air caused by filling operations.

C. Place flowable fill using method to ensure there are no voids.

1. Fill pipes and conduits from high end.
2. Fill manholes, tanks, and other structures from grade level access points.

D. After filling pipes and conduits seal both ends.

3.5 FIELD QUALITY CONTROL

A. Perform inspection and testing according to Florida Department of Transportation standards.

B. Defective Flowable Fill: Fill failing to meet the following test requirements or fill delivered without following documentation.

1. Test Requirements:

a. Minimum temperature at point of delivery.
b. Compressive strength requirements for each type of fill.

2. Documentation: Duplicate delivery tickets.

3.6 CLEANING

A. Remove spilled and excess flowable fill from Project Site.

B. Restore facilities and Site areas damaged or contaminated by flowable fill installation to existing condition before installation.

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SECTION 312333 - TRENCHING AND BACKFILLING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section with following regulations.

B. All work shall comply and be installed per latest City of Titusville Water Resources Department Technical Specifications (May 2022 or later), including Section 3.0 General Design and Construction Standards, Section 5.0 Sewer and Forcemain Design and Construction Standards, and Appendix A Approved Vendor List.

1.2 SUMMARY

A. Includes trench excavation, backfilling, and compaction for utility lines.

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SECTION 312500 - EROSION AND SEDIMENTATION CONTROLS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Sediment Traps/Silt Fences.
2. Sediment Fences.
3. Erosion Control Blanket.

1.3 REFERENCE STANDARD

A. EPA document titled: “Stormwater Management for Construction Activities – Developing Pollution Prevention Plans and Best Management Practices” document number EPA 832-R-92-005, dated 1992, or most recent edition. State or appropriate Conservation Commission standards can be substituted for the EPA standard if the State or Conservation Commission standard is equal to, or more detailed than, the EPA standard.

1.4 INFORMATIONAL SUBMITTALS

A. Stormwater Pollution Prevention Plan (SWPPP) as specified in “Quality Assurance” article.

B. Copy of EPA NPDES Notice of Intent to Discharge submitted to the EPA as specified in “Quality Assurance” article.

1.5 QUALITY ASSURANCE

A. Prepare and submit a Stormwater Pollution Prevention Plan (SWPPP) in accordance with the U.S. Environmental Protection Agency (EPA) National Pollution Discharge Elimination System (NPDES) General Permit applicable to this work) document number EPA 832-R-92-005, dated 1992, or most recent edition.

B. Prepare and submit the EPA NPDES Notice of Intent to Discharge to the applicable EPA office in accordance with EPA regulations.

PART 2 - PRODUCTS

2.1 SILT FENCE

A.

A. Sediment fence shall be a prefabricated commercial product made of a woven, polypropylene, ultraviolet resistant material such as “Envirofence” by Mirafi Inc., Charlotte, NC or equal.

2.2

2.2 EROSION CONTROL BLANKET

A. Erosion control blankets: 100 percent agricultural straw fiber matrix, 0.5 lbs / sq yd, stitch bonded with degradable thread between two photodegradable polypropylene nettings.

1. Product: Provide Model S150 Double Net Short-Term Blanket (12 months) by North American Green, Evansville, IN), or equal.

B. Prior to start of work, provide a certified statement as to the number of pounds of materials to be used per 100 gallons of water. Specify the number of square feet of seeding that can be covered with the quantity of solution in the Contractor's hydroseeder.

PART 3 - EXECUTION

3.1 SILT FENCE

A. Position sediment fences as indicated on Drawings and to prevent off site movement of sediment produced by construction activities as directed by the Engineer. Areas beyond limits of silt fence shall be undisturbed or stabilized.

B. Dig trench approximately 6-inch wide and 6-inch deep along proposed fence lines.

C. Drive stakes, 10 feet on center (maximum) at back edge of trenches. Drive stakes 2 feet (minimum) into ground.

D. Hang filter fabric on posts carrying to bottom of trench with about 4 inches of fabric laid across bottom of trench. Stretch fabric fairly taut along fence length and maintain secure both ways.

E. Backfill trench with excavated material and tamp.

F. Install pre-fabricated silt fence according to manufacturer's instructions.

3.2 EROSION CONTROL BLANKETS

A. Install erosion control blankets onto all exposed slopes to be loamed and seeded that are 4(Horizontal) to 1(Vertical) or steeper as shown on Drawings. Erosion control blankets shall also be installed in all seeded drainage swales and ditches, and as directed by Engineer in accordance with manufacturer's instructions.

B. The area to be covered shall be properly prepared, fertilized and seeded with permanent vegetation before the blanket is applied. When the blanket is unrolled, the netting shall be on top and

the fibers in contact with the soil over the entire area. The blankets shall be applied in the direction of water flow and stapled.

C. Place blankets and stapled together in accordance with manufacturer's instructions. Side overlaps shall be 4-inch minimum. The staples shall be made of wire, 0.091-inch in diameter or greater, "U" shaped with legs 10 inches in length and a 1-1/2-inch crown. Commercial biodegradable stakes may also be used with prior approval by the Engineer. The staples shall be driven vertically into the ground, spaced approximately two linear feet apart, on each side, and one row in the center alternately spaced between each size. Upper and lower ends of the matting shall be buried to a depth of 4 inches in a trench. In swales and ditches, erosion stops shall be created every 25 feet by making a fold in the fabric and carrying the fold into a silt trench across the full width of the blanket. The bottom of the fold shall be 4 inches below the ground surface. Staple on both sides of fold. Where the matting must be cut or more than one roll length is required in the swale, turn down upper end of downstream roll into a slit trench to a depth of 4 inches. Overlap lower end of upstream roll 4 inches past edge of downstream roll and staple.

D. To ensure full contact with soil surface, roll matting with a roller weighing 100 lbs/ft of width perpendicular to flow direction after seeding, placing matting and stapling. Thoroughly inspect channel after completion. Correct any areas where matting does not present a smooth surface in full contact with the soil below. EC blankets for bottom of swales and along edge of pathways.

3.3 SITE STABILIZATION

A. Incorporate erosion control devices indicated on the Drawings into the Project at the earliest practicable time.

B. Construct, stabilize and activate erosion controls before site disturbance within tributary areas of those controls.

C. Stockpile and waste pile heights shall not exceed 35 feet. Slope stockpile sides at 2: 1 or flatter.

D. Stabilize any disturbed area of affected erosion control devices on which activity has ceased and which will remain exposed for more than 20 days.

3.4 FIELD QUALITY CONTROL

A. Inspect erosion control devices on a weekly basis and after each runoff event. Make necessary repairs to ensure erosion and sediment controls are in good working order.

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SECTION 313700 - RIPRAP

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

B. All work shall comply and be installed per latest Florida Department of Transportation Standard Specifications for Road and Bridge Construction (FY 2024-2025 or later), including Section 530 Revetment Systems.

1.2 SUMMARY

A. Section Includes: Riprap, placed loose.

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SECTION 315000 - EXCAVATION SUPPORT AND PROTECTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes:

1. Temporary excavation and trench support and protection systems.
2. Delegated Design.

B. Related Requirements:

1. Section 312319 "Dewatering" for dewatering and drainage.
2. Section 312333 “Trenching and Backfilling” for excavation, backfilling, and compaction in trench excavations.

1.3 DELEGATED DESIGN SUBMITTALS

A. Shop Drawings: For excavation support and protection system, prepared by or under the supervision of a Professional Engineer licensed in the State of Florida, meeting the minimum performance requirements in Part 2 of this Section.

1. Include overall system plan, indicating clearances, dimensions, material properties, member sizes, locations, spacing and member penetrations depths, and locations of various types of lateral supports.
2. Show details, layout, arrangement, equipment requirements, and method of construction of proposed excavation support system.
3. Indicate existing and proposed utilities, structures or other obstructions.
4. Show wall elevations and locations of bracing.
5. Show overall installation sequence and removal of bracing. Indicate work levels to be performed before bracing is installed or removed.
6. Method of pre-loading bracing, if required, including preload for each member, and method of locking-off the pre-load. Submit detailed drawings of connections, jacking supports, and method of shimming.
7. Include procedures for resolving difficulties arising from misalignment of members exposed during excavation and criteria for implementing those procedures.

B. Design Calculations: For excavation support and protection system. Include analysis data prepared, signed, and sealed by Professional Engineer licensed in Florida responsible for their preparation.

1. Include loads on excavation support system for all stages of excavation, bracing removal, and concrete placement, including material and equipment loads on adjacent ground during construction.
2. Include design of wall and bracing members including details for all construction stages.
3. Include theoretical deflections of excavation support system and deformation of structures, pipelines, and other improvements located within areas influencing excavations.

1.4 INFORMATIONAL SUBMITTALS

A. Submit quality control measures to ensure that performance of excavation support system complies with project requirements.

B. Submit welder qualifications and weld procedures in accordance with AWS D1.1.

C. Qualification Data: For land surveyor.

D. Maintain at least one copy of design at job site during excavation that includes plan indicating sizes, types, and configurations of the materials to be used in protective system. Identity registered Contractor's design engineer who stamped the design.

E. Do not proceed with excavation support or protection activities until submittals have been reviewed by Engineer.

1.5 QUALITY ASSURANCE

A. Contractor Qualifications: Minimum 5 years' experience compatible to indicated Work, and who employs labor and supervisory personnel similarly experienced in Work of this Section.

B. Contractor's Design Engineer: Professional Engineer licensed in the State of Florida with at least 5 years' professional experience in design and construction of support of excavation systems and having completed a minimum of 5 successful excavation support projects of equal type, size, and complexity to specified work.

C. Existing Conditions: Using photographs or video recordings, show existing conditions of adjacent construction and site improvements that might be misconstrued as damage caused by inadequate performance of excavation support and protection systems. Submit before Work begins.

D. Regulatory Requirements: Comply with authorities having jurisdiction, including OSHA requirements.

E. Record Drawings: Identify locations and depths of capped utilities, abandoned-in-place support and protection systems, and other subsurface structural, electrical, or mechanical conditions.

1.6 FIELD CONDITIONS

A. Interruption of Existing Utilities: Do not interrupt any utility serving facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary utility according to requirements indicated:

1. Contact utility companies and other responsible authorities to locate and mark underground utilities.
2. Notify the Engineer and Owner no fewer than two days in advance of proposed interruption of utility.
3. Do not proceed with interruption of utility without Owner's written permission.

B. Project-Site Information: Geotechnical data has been prepared for this Project and is available for information only. The opinions expressed in this report are those of a geotechnical engineer and represent soil borings and tests, conducted by a geotechnical engineer. Owner is not responsible for interpretations or conclusions drawn from data.

1. Make additional test borings and conduct other exploratory operations necessary for excavation support and protection according to the performance requirements.
2. The geotechnical data is included elsewhere in Project Manual.

C. Survey Work: Engage qualified land surveyor or professional engineer to survey adjacent existing buildings, structures, and site improvements; establish exact elevations at fixed points to act as benchmarks. Clearly identify benchmarks and record existing elevations.

PART 2 - PRODUCTS

2.1 PERFORMANCE AND DESIGN CRITERIA

A. Delegated Design: Engage a qualified professional engineer, as defined in Sections 013300 “Submittal Procedures” and 014000 “Quality Requirements”, to design excavation support and protection system.

B. Provide, design, monitor, and maintain excavation support and protection system capable of supporting excavation sidewalls and of resisting earth and hydrostatic pressures and superimposed and construction loads.

1. Contractor Design: Design excavation support and protection system, including comprehensive engineering analysis by qualified professional engineer.
2. Prevent surface water from entering excavations by grading, dikes, or other means.
3. Install excavation support and protection systems to minimize horizontal and vertical movements without damaging existing buildings, structures, and site improvements adjacent to excavation.
4. Continuously monitor vibrations, settlements, and movements to ensure stability of excavations and constructed slopes and to ensure that damage to permanent structures is prevented.

C. Do not permit excavations below the level of the base of adjacent existing foundations or retaining walls, unless excavation design and bracing includes an analysis of stability of structure supported by foundation and if necessary, incorporates required bracing or underpinning of foundation.

D. For support systems in which bracing is installed between opposite sides of the excavation, design excavation support of both sides to be nearly the same as feasible.

E. Where necessary to resist point loads, fill pipe piles used as soldier piles with concrete. Do not consider concrete strength in design of pipe pile for bending stress.

F. Design, install, operate, and maintain ground water control system to control groundwater inflows, prevent piping or loss of ground, and maintain stability of the excavation. Refer to the requirements of Section 312319 “Dewatering.”

G. Design review and field monitoring activities by Owner or the Engineer does not relieve Contractor of its work responsibilities.

2.2 MATERIALS

A. General: Provide materials that are either new or in serviceable condition.

B. Structural Steel: ASTM A36/A36M, ASTM A690/A690M, or ASTM A992/A992M.

C. Steel Pipe Used as Soldier Piling: ASTM A252, Grade 3 or better.

D. Steel Sheet Piling: ASTM A328/A328M, ASTM A572/A572M, or ASTM A690/A690M; with continuous interlocks.

1. Corners: Roll-formed corner shape with continuous interlock.

E. Wood Lagging: Lumber, mixed hardwood, nominal rough thickness of 3 inches with minimum allowable flexural strength of 1,100 psi (7,585 kPa).

F. Cast-in-Place Concrete: ACI 301, with minimum compressive strength of 3,000 psi(20 MPa), unless a higher strength is required for application.

G. Reinforcing Bars: ASTM A615/A615M, Grade 60, deformed.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Obtain permits from local authority having jurisdiction prior to initiating excavation work.

B. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards that could develop during excavation support and protection system operations.

1. Shore, support, and protect utilities encountered.

C. Install excavation support and protection systems to ensure minimum interference with roads, streets, walks, and other adjacent occupied and used facilities.

1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction. Provide alternate routes around closed or obstructed traffic ways if required by authorities having jurisdiction.
2. Install fencing, gates, lights, and signs around excavations and staging areas to provide for public safety.

D. Locate excavation support and protection systems clear of permanent construction so that construction and finishing of other work is not impeded.

3.3 GENERAL

A. Install excavation support systems in accordance with the shop drawings and applicable permits.

B. Fill voids between excavation support system and earth with materials acceptable to Engineer.

C. If unstable material is encountered during excavation, take immediately measures to contain it in place and prevent ground displacement.

D. If settlement or deflections of supports indicate that support system requires modification to prevent excessive movements, redesign and resubmit revised shop drawings and calculations to the Engineer without additional compensation.

E. Maintain sufficient quantity of material on site for protection of work and for use in case of accident or emergency.

3.4 PORTABLE TRENCH BOXES

A. Use portable trench boxes or sliding trench shields only for worker protection.

B. Additional excavation, backfilling, and surface restoration required as result of trench box use shall be provided without additional compensation.

C. Design, construct, and maintain trench boxes or shields to meet acceptable engineering and industry standards.

D. Install shields in a manner to restrict lateral or other hazardous movement of the shield in the event of sudden lateral loads.

E. Maintain a written copy of trench box manufacturer's specifications, recommendations, and limitations at job site during excavation work.

3.5 SOLDIER PILES AND LAGGING

A. Install steel soldier piles before starting excavation.

1. Install using impact hammer or vibratory hammer in pre-drilled holes.
2. Soldier Piles in Pre-Drilled Holes:

    a. Provide casing or other methods of support to prevent caving of holes and loss of ground.
    b. Backfill with concrete from elevation of bottom excavation to pile tip elevation. Backfill remainder of pre-drilled hole with lean concrete or sand.
    c. Pre-drilled hole of sufficient diameter allowing for proper alignment and concrete backfilling of pile.

3. Install driven piles with driving shoes where hard driving is anticipated.
4. Advance driven soldier piles without aid of a water jet.

B. Extend soldier piles below excavation grade level to depths shown on reviewed Shop Drawings. Space soldier piles at regular intervals not to exceed allowable flexural strength of wood lagging. Accurately align exposed faces of flanges to vary not more than 2 inches from a horizontal line and not more than 1:120 out of vertical alignment.

C. Install wood lagging within flanges of soldier piles as excavation proceeds. Trim excavation as required to install lagging.

1. Install lagging so ground loss does not occur between adjacent or below lowest board. As excavation proceeds, do not maximum height of 4 feet for unlagged face of excavation.
2. Do not exceed unlagged face of 2 feet, if water seeps or flows from excavation face or excavation face becomes unstable.

D. Fill voids behind lagging with soil and compact.

E. Install wales at locations indicated on Drawings and secure to soldier piles.

3.6 STEEL SHEET PILING

A. Thoroughly cleaned and inspect sheet piles for defects and proper interlock dimensions prior to installation. Provide tool for checking interlock dimensions.

B. Before starting excavation, drive one-piece sheet piling lengths in plumb position and tightly interlock vertical edges for its entire length to form a continuous barrier. Form a continuous diaphragm throughout length of each run of wall, bearing tightly against original ground.

1. Exercise care in driving so interlocking members can be extracted without damaging adjacent structures or utilities.
2. Use driving, cutting, and splicing methods conforming to approved Shop Drawings.
3. Use templates or other temporary alignment facilities to maintain piling line.

C. Accurately place piling, using templates and guide frames unless otherwise recommended in writing by sheet piling manufacturer. Limit vertical offset of adjacent sheet piling to 5 feet. Accurately align exposed faces of sheet piling to vary not more than 2 inches from a horizontal line and not more than 1:120 out of vertical alignment.

D. Install each sheet pile having sufficient clearance in interlocks to slide under its own weight into interlock of previously placed sheet pile.

E. Do not excavate in advance of steel sheet piling installation.

F. Remove obstructions encountered before the specified embedment for piles. Where obstructions cannot be removed, re-evaluate sheet pile system by Contractor's Design Engineer show reduced embedment and additional toe stability measures to be implemented for sheet pile wall realignment. Submittal proposed design measures to the Engineer for review.

G. Withdraw damaged or faulty aligned pilings with provide new piling, driven properly in its place without additional compensation.

H. Cut tops of sheet piling to uniform elevation at top of excavation.

3.7 INTERNAL BRACING

A. Bracing: Locate bracing to clear columns, floor framing construction, and other permanent work. If necessary to move brace, install new bracing before removing original brace.

1. Do not place bracing where it will be cast into or included in permanent concrete work, unless otherwise approved by Engineer.
2. Install internal bracing if required to prevent spreading or distortion of braced frames.
3. Maintain bracing until structural elements are supported by other bracing or until permanent construction is able to withstand lateral earth and hydrostatic pressures.

B. Provide internal bracing to carry maximum design load without distortion or buckling.

C. Include web stiffeners, plates, or angles required to prevent rotation, crippling, or buckling of connections and points of bearing between structural steel members. Allow for eccentricities caused by field fabrication and assembly.

D. Install and maintain bracing support members in tight contact with each other and with the surface being supported.

E. Coordinate excavation work with installation of bracing. Extend excavation no more than 2 feet below any brace level prior to installation of the bracing.

F. Use procedures that produce uniform loading of bracing member without eccentricities, overstressing, or distortion of system members.

3.8 FIELD QUALITY CONTROL

A. Survey-Work Benchmarks: Resurvey benchmarks regularly during installation of excavation support and protection systems, excavation progress, and for as long as excavation remains open. Maintain an accurate log of surveyed elevations and positions for comparison with original elevations and positions. Promptly notify Engineer if changes in elevations or positions occur or if cracks, sags, or other damage is evident in adjacent construction.

B. Promptly correct detected bulges, breakage, or other evidence of movement to ensure that excavation support and protection system remains stable.

C. Promptly repair damages to adjacent facilities caused by installation or faulty performance of excavation support and protection systems.

3.9 REMOVAL

A. Remove excavation support and protection systems when construction has progressed sufficiently to support excavation and earth and hydrostatic pressures. Remove in stages to avoid disturbing underlying soils and rock or damaging structures, pavements, facilities, and utilities.

1. Remove excavation support and protection systems to a minimum depth of 48 inches below overlying construction and abandon remainder.
2. Fill voids immediately with approved backfill compacted to density specified in Section 312333 “Trenching and Backfilling.”
3. Repair or replace, as approved by Engineer, adjacent work damaged or displaced by removing excavation support and protection systems.

B. Do not remove vertical support members that were installed within zone of influence of new or existing structures. Cut off support members installed within this zone at 5 feet below finished grade and abandon in place.

C. Do not remove internal bracing or transfer loads to permanent structure without prior acceptance of the Engineer.

D. Begin removal at excavation bottom and progress upward. Slowly release members noting indication of possible failure of remaining members or possible cave-in of excavation sides.

E. Progress backfilling together with removal of support systems from excavations.

F. Remove all portions of excavation support, unless otherwise indicated by approved Shop Drawings.

1. Zone of Influence Definition: Zone extending down and away from outer edge of the structure at 1 horizontal to 1 vertical.

G. Do not leave wood as part of abandoned portion of the work.

H. When removing excavation support system, do not disturb or damage adjacent buildings, structures, waterproofing material, or utilities. Fill voids immediately with lean concrete or well-graded cohesionless sand or as directed by Engineer.

I. Immediately remove excavation support system material from site.

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SECTION 321123 - BASE COURSES FOR PAVEMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

B. All work shall comply and be installed per the latest Florida Department of Transportation Standard Specifications for Road and Bridge Construction (FY 2024-2025 or later) except as modified by latest City of Titusville Engineering Services Department Detail Standards and Specifications (May 2009 or later).

1.2 SUMMARY

A. Section Includes:

1. Base course layers constructed to support asphalt and concrete pavement surfaces.
2. Subgrade stabilization.

END OF SECTION 321123

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SECTION 321216 - ASPHALT PAVING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

B. All work shall comply and be installed per the latest Florida Department of Transportation Standard Specifications for Road and Bridge Construction (FY 2024-2025 or later) except as modified by the latest City of Titusville Engineering Services Department Detail Standards and Specifications (May 2009 or later).

1.2 SUMMARY

A. Section Includes:

1. Asphalt base course paving materials.
2. Asphalt binder course paving materials.
3. Asphalt wearing course paving materials.

1.3 ACTION SUBMITTALS

A. Product Data:

1. Submit product information for asphalt and aggregate materials.
2. Submit mix design with laboratory test results supporting design.

1.4 INFORMATIONAL SUBMITTALS

A. Manufacturer's Certificate: Certify Products meet or exceed City of Titusville and Florida Department of Transportation standards.

1.5 QUALITY ASSURANCE

A. Mixing Plant: Certified by Florida Department of Transportation.

B. Obtain materials from same source throughout.

C. Maintain one copy of each document on site.

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1.6 QUALIFICATIONS

A. Installer: Company specializing in performing work of this section approved by manufacturer.

PART 2 - PRODUCTS

2.1 ASPHALT PAVING

A. Performance / Design Criteria:

1. Paving: Design for light duty commercial vehicles, residential streets, main street arteries, and movement of trucks up to 60,000 lbs**.**

B. Asphalt Materials:

1. All materials shall be in accordance with Florida Department of Transportation standards.

2.2 MIXES

Asphalt Paving Mixtures: Designed in accordance with Florida Department of Transportation standards, Superpave Asphalt Concrete.

2.3 SOURCE QUALITY CONTROL

A. Submit proposed mix design of each class of mix for review prior to beginning of Work.

B. Test samples in accordance with AI MS-2.

PART 3 - EXECUTION

3.1 DEMOLITION

A. Saw cut and remove existing paving as indicted on Drawings.

B. Clean existing paving to remove foreign material, excess joint sealant and crack filler from paving surface.

3.2 EXAMINATION

A. Verify utilities indicated under paving are installed with excavations and trenches backfilled and compacted per City of Titusville standards.

B. Verify compacted subgrade subbase is dry and ready to support paving and imposed loads. Asphaltic concrete shall be laid only where the surface to be covered is intact, firm, cured and dry, and only when weather conditions are suitable. The temperature of the mixture at the time of spreading shall be within limits of Florida Department of Transportation standards.

1. Proof roll subbase with 8 tons in minimum two perpendicular passes to identify soft spots.
2. Remove soft subbase and replace with compacted fill.

C. Verify gradients and elevations of base are correct.

D. Verify existing gutter drainage grilles and frames, manhole frames and utility covers were not damaged during removal of existing pavement.

3.3 INSTALLATION

A. Subbase:

1. Prepare subbase in accordance with Florida Department of Transportation standards.

B. Base:

1. Prepare base in accordance with Florida Department of Transportation standards.
2. Unless other otherwise directed by the Engineer, the surface shall be "hard-planed" with a blade grader immediately prior to application of the prime coat to remove the thin glaze or cemented surface and to allow free penetration of the prime material. The materials planed from the base shall be removed from the base area.

C. Primer:

1. Apply primer in accordance with Florida Department of Transportation standards.
2. Use clean sand to blot excess primer.

D. Tack Coat:

1. Apply tack coat in accordance with Florida Department of Transportation standards.
2. Apply tack coat to contact surfaces of curbs, gutters and concrete pavement.
3. Coat surfaces of manhole and catch basin, frames with oil to prevent bond with asphalt paving. Do not tack coat these surfaces.

E. Single Course Asphalt Paving:

1. Install Work in accordance with Florida Department of Transportation standards.
2. Place asphalt within 24 hours of applying primer or tack coat.
3. Place asphalt wearing course to thickness indicated on Drawings.
4. Compact paving by rolling to specified density. Do not displace or extrude paving from position. Hand compact in areas inaccessible to rolling equipment.
5. Perform rolling with consecutive passes to achieve even and smooth finish without roller marks.

F. Pavement Markings:

1. Existing pavement markings removed or obliterated by Contractor operations shall be promptly replaced, in kind, to the satisfaction of Engineer.

3.4 TOLERANCES

A. Flatness: Maximum variation of 1/4-inch measured with 10-foot straight edge.

B. Scheduled Compacted Thickness: Within 1/4-inch.

C. Variation from Indicated Elevation: Within 1/2-inch.

3.5 FIELD QUALITY CONTROL

A. Take samples and perform tests in accordance with City of Titusville and Florida Department of Transportation standards. Unless otherwise specified, all test samples required shall be supplied by the Contractor.

B. Asphaltic concrete mixtures shall be obtained only from plants which comply with the requirements of Florida Department of Transportation standards, Section 320 as applicable, using materials specified herein, and producing the specified mixture. General construction requirements for all hot bituminous mixtures specified herein shall conform to Florida Department of Transportation standards Section 330, as applicable.

C. Asphalt Paving Mix Temperature: Measure temperature at time of placement.

D. Asphalt Paving Thickness: ASTM D3549; test one 2 inch core sample from every 500 linear feet compacted paving with a minimum of one per roadway.

E. Asphalt Paving Density: ASTM D1188 or ASTM D2726; test one 6 inch core sample from every 500 linear feet compacted paving with a minimum of three per roadway.

F. Any mixture caught in transit by a sudden rain may be laid at the Contractor’s risk, if the base is in suitable condition. Under no circumstances shall asphaltic material be placed while rain is falling, or when there is water on the area to be paved.

3.6 PROTECTION

A. Immediately after placement, protect paving from mechanical injury for 24 hours or until surface temperature is less than 140 degrees F.

END OF SECTION 321216

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SECTION 321313 - CONCRETE PAVING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

B. All work shall comply and be installed per the latest Florida Department of Transportation Standard Specifications for Road and Bridge Construction (FY 2024-2025 or later) except as modified by latest City of Titusville Engineering Services Department Detail Standards and Specifications (May 2009 or later).

1.2 SUMMARY

A. Section Includes:

1. Portland cement concrete pavement, plain or reinforced, in accordance with the lines, grades and dimensions shown on the plans.
2. Steel reinforcement, dowel bars and tie bars.
3. Placing and finishing the concrete.
4. Concrete admixtures and additives.
5. Joints and joint materials.
6. Curing the pavement and curing materials.

END OF SECTION 321313

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SECTION 321723 - PAVEMENT MARKINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

B. All work shall comply and be installed per latest Florida Department of Transportation Standard Specifications for Road and Bridge Construction (FY 2024-2025 or later), including Section 710 Painted Pavement Markings.

1.2 SUMMARY

A. Section includes painted markings applied to asphalt and concrete pavement.

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SECTION 323113 - CHAIN LINK FENCES AND GATES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Chain-link fences.
2. Swing gates.
3. Delegated Design.

B. Related Requirements:

1. Section 033010 "Miscellaneous Cast-in-Place Concrete" for cast-in-place concrete and post footings.
2. Section 050519 “Post-Installed Anchors and Reinforcing Bars” for anchorage to retaining wall.

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for the following:

a. Fence and gate posts, rails, anchorage and fittings.
b. Chain-link fabric, reinforcements, and attachments.
c. Gates and hardware.

B. Shop Drawings: For each type of fence and gate assembly.

1. Include plans, elevations, sections, details, and attachments to other work.
2. Include accessories, hardware, gate operation, and operational clearances.

C. Samples for Initial Selection: For each type of factory-applied finish.

D. Samples for Verification: For each type of component with factory-applied finish, prepared on Samples of size indicated below:

1. Polymer-Coated Components: In 6-inch (150-mm) lengths for components and on full-sized units for accessories.

1.5 DELEGATED DESIGN SUBMITTALS

A. For structural performance of chain-link fence, anchorage to concrete, and gate frameworks, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

1.6 INFORMATIONAL SUBMITTALS

A. Qualification Data: For factory-authorized service representative.

B. Product Certificates: For each type of chain-link fence and gate.

C. Product Test Reports: For framework strength according to ASTM F1043, for tests performed by manufacturer and witnessed by qualified testing agency.

D. Field quality-control reports.

E. Sample Warranty: For special warranty.

1.7 QUALITY ASSURANCE

A. Testing Agency Qualifications: For testing fence grounding; member company of NETA or an NRTL.

1. Testing Agency's Field Supervisor: Certified by NETA to supervise on-site testing.

1.8 FIELD CONDITIONS

A. Field Measurements: Verify layout information for chain-link fences and gates shown on Drawings in relation to property survey and existing structures. Verify dimensions by field measurements.

1.9 WARRANTY

A. Special Warranty: Installer agrees to repair or replace components of chain-link fences and gates that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:

a. Failure to comply with performance requirements.

b. Deterioration of metals, metal finishes, and other materials beyond normal weathering.

2. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Structural Performance: Chain-link fence, anchorage to concrete, and gate frameworks shall withstand the design wind loads and stresses for fence height(s) and under exposure conditions indicated according to ASCE/SEI 7.

1. Design Wind Load: 153 mph. Refer to S-1.

a. Minimum Post Size: Determine according to ASTM F1043 for post spacing not to exceed 8 feet for Material Group IA, ASTM F1043, Schedule 40 steel pipe.

B. Lightning Protection System: Maximum resistance-to-ground value of 25 ohms at each grounding location along fence under normal dry conditions.

2.2 CHAIN-LINK FENCE FABRIC

A. General: Provide fabric in one-piece heights measured between top and bottom of outer edge of selvage knuckle or twist according to "CLFMI Product Manual" and requirements indicated below:

1. Fabric Height: As indicated on Drawings.
2. Steel Wire for Fabric: Wire diameter of 0.148 inch (3.76 mm).

a. Mesh Size: 2 inches (50 mm).
b. Zinc-Coated Fabric: ASTM A392, Type II, Class 2, 2.0 oz./sq. ft. (610 g/sq. m) with zinc coating applied after weaving.
c. Polymer-Coated Fabric: ASTM F668, Class 1 over zinc-coated steel wire.

1) Color: Black, according to ASTM F934.

d. Coat selvage ends of metallic-coated fabric before the weaving process with manufacturer's standard clear protective coating.

3. Selvage: Knuckled at both selvages.

2.3 FENCE FRAMEWORK

A. Posts and Rails: ASTM F1043 for framework, including rails, braces, and line; terminal; and corner posts. Provide members with minimum dimensions and wall thickness according to ASTM F1043 based on the following:

1. Fence Height: As indicated on Drawings.
2. Heavy-Industrial-Strength Material: Group IA, round steel pipe, Schedule 40.

    a. Line Post: 2.875 inches (73 mm) in diameter.
    b. End, Corner, and Pull Posts: 3.500 inches (89 mm) in diameter.

3. Horizontal Framework Members: Intermediate, top and bottom rails according to ASTM F1043.

    a. Top Rail: 2.375 inches (60 mm) in diameter.
    b. Intermediate Rail: 2.375 inches (60 mm) in diameter.
    c. Bottom Rail: 2.375 inches (60 mm) in diameter.

4. Brace Rails: ASTM F1043.
5. Metallic Coating for Steel Framework:

    a. Type A: Not less than minimum 2.0-oz./sq. ft. (0.61-kg/sq. m) average zinc coating according to ASTM A123/A123M or 4.0-oz./sq. ft. (1.22-kg/sq. m) zinc coating according to ASTM A653/A653M.
    b. Type B: Zinc with organic overcoat, consisting of a minimum of 0.9 oz./sq. ft. (0.27 kg/sq. m) of zinc after welding, a chromate conversion coating, and a clear, verifiable polymer film.
    c. External, Type B: Zinc with organic overcoat, consisting of a minimum of 0.9 oz./sq. ft. (0.27 kg/sq. m) of zinc after welding, a chromate conversion coating, and a clear, verifiable polymer film. Internal, Type D, consisting of 81 percent, not less than 0.3-mil- (0.0076-mm-) thick, zinc-pigmented coating.
    d. Coatings: Any coating above.

6. Polymer coating over metallic coating.

    a. Color: Black, according to ASTM F934.

2.4 TENSION WIRE

A. Polymer-Coated Steel Wire: 0.148-inch- (3.8-mm) diameter, tension wire according to ASTM F1664, Class 1 over Zn-5-Al-MM-alloy-coated steel wire.

1. Color: Match chain-link fabric, according to ASTM F934.

2.5 SWING GATES

A. General: ASTM F900 for gate posts and single and double swing gate types.

1. Gate Leaf Width: As indicated.
2. Framework Member Sizes and Strength: Based on gate fabric height as indicated.

B. Pipe and Tubing:

1. Zinc-Coated Steel: ASTM F1043 and ASTM F1083; protective coating and finish to match fence framework.
2. Gate Posts: Round tubular steel.
3. Gate Frames and Bracing: Round tubular steel.

C. Frame Corner Construction: assembled with corner fittings.

D. Hardware:

1. Hinges: 360-degree inward and outward swing.
2. Latch: Permitting operation from both sides of gate with provision for padlocking accessible from both sides of gate.
3. Lock: Manufacturer's standard internal device.
4. Closer: Manufacturer's standard.

2.6 FITTINGS

A. Provide fittings according to ASTM F626.

B. Post Caps: Provide for each post.

1. Provide line post caps with loop to receive tension wire or top rail.

C. Rail and Brace Ends: For each gate, corner, pull, and end post.

D. Rail Fittings: Provide the following:

1. Top Rail Sleeves: Pressed-steel or round-steel tubing not less than 6 inches (152 mm) long.
2. Rail Clamps: Line and corner boulevard clamps for connecting intermediate and bottom rails to posts.

E. Tension and Brace Bands: Pressed steel.

F. Tension Bars: Steel, length not less than 2 inches (50 mm) shorter than full height of chain-link fabric. Provide one bar for each gate and end post, and two for each corner and pull post, unless fabric is integrally woven into post.

G. Truss Rod Assemblies: Steel, hot-dip galvanized after threading rod and turnbuckle or other means of adjustment.

H. Tie Wires, Clips, and Fasteners: According to ASTM F626.

1. Standard Round Wire Ties: For attaching chain-link fabric to posts, rails, and frames, according to the following:

a. Hot-Dip Galvanized Steel: 0.148-inch- (3.76-mm) diameter wire; galvanized coating thickness matching coating thickness of chain-link fence fabric.

I. Finish:

1. Metallic Coating for Pressed Steel or Cast Iron: Not less than 1.2 oz./sq. ft. (366 g/sq. m) of zinc.

    a. Polymer coating over metallic coating.

2.7 GROUT AND ANCHORING CEMENT

A. Nonshrink, Nonmetallic Grout: Factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with ASTM C1107/C1107M. Provide grout, recommended in writing by manufacturer, for exterior applications.

B. Anchoring Cement: Factory-packaged, nonshrink, nonstaining, hydraulic-controlled expansion cement formulation for mixing with water at Project site to create pourable anchoring, patching, and grouting compound. Provide formulation that is resistant to erosion from water exposure without needing protection by a sealer or waterproof coating, and that is recommended in writing by manufacturer for exterior applications.

2.8 GROUNDING MATERIALS

A. Connectors and Grounding Rods: Listed and labeled for complying with UL 467.

1. Connectors for Below-Grade Use: Exothermic welded type.
2. Grounding Rods: Copper-clad steel, 5/8 by 96 inches (16 by 2440 mm).

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas and conditions, with Installer present, for compliance with requirements for site clearing, earthwork, pavement work, and other conditions affecting performance of the Work.

1. Do not begin installation before final grading is completed unless otherwise permitted by Engineer.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Stake locations of fence lines, gates, and terminal posts. Do not exceed intervals of 500 feet (152 m) or line of sight between stakes. Indicate locations of utilities, lawn sprinkler system, underground structures, benchmarks, and property monuments.

3.3 CHAIN-LINK FENCE INSTALLATION

A. Install chain-link fencing according to ASTM F567 and more stringent requirements specified.

B. Post Excavation: Drill or hand-excavate holes for posts to diameters and spacings indicated, in firm, undisturbed soil.

C. Post Setting: Set posts in concrete at indicated spacing into firm, undisturbed soil. Anchor to concrete retaining wall where required.

1. Verify that posts are set plumb, aligned, and at correct height and spacing, and hold in position during setting with concrete or mechanical devices.
2. Concrete Fill: Place concrete around posts to dimensions indicated and vibrate or tamp for consolidation. Protect aboveground portion of posts from concrete splatter.

a. Exposed Concrete: Extend 2 inches (50 mm) above grade; shape and smooth to shed water.

D. New posts for all fences shall be anchored directly into new concrete footings or on to new retaining wall as shown on Drawings.

E. Grout for Fence Posts:

1. Products: Provide one of the following:

a. "Sikadure 32 HiMod," by Sika Corporation.
b. Or equal.

2. Grout shall be in accordance with the following:

a. ASTM D 695: Compressive Properties at 28 days.
b. ASTM D 638: Tensile Properties at 14 days.
c. ASTM D 790: Flexural Properties at 14 days.
d. ASTM D 732Shear Strength at 14 days: 5000 psi (34.5 MPa) minimum.
e. ASTM D 570: Total Water Absorption at 7 days: 1.0 percent max. (2-hour boil).
f. ASTM C 882: Bond Strength Hardened Concrete to Hardened Concrete.

1) 2 day (dry cure): 2700 psi (18.6 MPa) PSI min.
2) 14 day (moist cure): 2200 psi (15.2 MPa) 2200 PSI min.

g. ASTM D648: Deflection Temperature at 14 days: 102 degrees F (39 degress C) minimum. (fiber stress loading = 264 psi (1.8 MPa)).
h. Pull-out Strength: In 5000 psi (34.5 MPa) minimum. concrete, using Grade 60 steel rebar, embedded 10 bar diameters, in a properly prepared hole having a diameter of the rebar plus 1/4 inch (6 mm) maximum. Tensile Stress: 90000 psi (620 MPa) minimum. (rebar fracture).
i. The epoxy resin adhesive shall be approved by the US Department of Agriculture.
j. Posts Set into Holes in Concrete: Form or core drill holes not less than 5 inches (127 mm) deep and 3/4 inch (20 mm) larger than OD of post. Clean holes of loose material, insert posts, and fill annular space between post and concrete with nonshrink, nonmetallic grout or anchoring cement, mixed and placed according to anchoring material manufacturer's written instructions. Finish anchorage joint to slope away from post to drain water.

F. Terminal Posts: Install terminal end, corner, and gate posts according to ASTM F567 and terminal pull posts at changes in horizontal or vertical alignment of 15 degrees or more. For runs exceeding 500 feet (152 m), space pull posts an equal distance between corner or end posts.

G. Line Posts: Space line posts uniformly at 96 inches (2440 mm) o.c.

H. Post Bracing and Intermediate Rails: Install according to ASTM F567, maintaining plumb position and alignment of fence posts. Diagonally brace terminal posts to adjacent line posts with truss rods and turnbuckles. Install braces at end and gate posts and at both sides of corner and pull posts.

1. Locate horizontal braces at midheight of fabric 72 inches (1830 mm) or higher, on fences with top rail, and at two-third fabric height on fences without top rail. Install so posts are plumb when diagonal rod is under proper tension.

I. Tension Wire: Install according to ASTM F567, maintaining plumb position and alignment of fence posts. Pull wire taut, without sags. Fasten fabric to tension wire with 0.120-inch- (3.05-mm-) diameter hog rings of same material and finish as fabric wire, spaced a maximum of 24 inches (610 mm) o.c. Install tension wire in locations indicated before stretching fabric. Provide horizontal tension wire at the following locations:

1. Extended along bottom of fence fabric. Install top tension wire through post cap loops. Install bottom tension wire within 6 inches (152 mm) of bottom of fabric and tie to each post with not less than same diameter and type of wire.

J. Top Rail: Install according to ASTM F567, maintaining plumb position and alignment of fence posts. Run rail continuously through line post caps, bending to radius for curved runs and terminating into rail end attached to posts or post caps fabricated to receive rail at terminal posts. Provide expansion couplings as recommended in writing by fencing manufacturer.

K. Intermediate and Bottom Rails: Secure to posts with fittings.

L. Chain-Link Fabric: Apply fabric to outside of enclosing framework. Leave 3-inch (75-mm) bottom clearance between finish grade or surface and bottom selvage unless otherwise indicated. Pull fabric taut and tie to posts, rails, and tension wires. Anchor to framework so fabric remains under tension after pulling force is released.

M. Tension or Stretcher Bars: Thread through fabric and secure to end, corner, pull, and gate posts, with tension bands spaced not more than 15 inches (380 mm) o.c.

N. Tie Wires: Use wire of proper length to firmly secure fabric to line posts and rails. Attach wire at one end to chain-link fabric, wrap wire around post a minimum of 180 degrees, and attach other end to chain-link fabric according to ASTM F626. Bend ends of wire to minimize hazard to individuals and clothing.

1. Maximum Spacing: Tie fabric to line posts at 12 inches (300 mm) o.c. and to braces at 24 inches (610 mm) o.c.

O. Fasteners: Install nuts for tension bands and carriage bolts on the side of fence opposite the fabric side.

3.4 GATE INSTALLATION

A. Install gates according to manufacturer's written instructions, level, plumb, and secure for full opening without interference. Attach fabric as for fencing. Attach hardware using tamper-resistant or concealed means. Install ground-set items in concrete for anchorage. Adjust hardware for smooth operation.

3.5 GROUNDING AND BONDING

A. Fence and Gate Grounding:

1. Ground for fence and fence posts shall be a separate system from ground for gate and gate posts.
2. Install ground rods and connections at maximum intervals of 1500 feet (450 m).
3. Fences within 100 Feet (30 m) of Buildings, Structures, Walkways, and Roadways: Ground at maximum intervals of 750 feet (225 m).
4. Ground fence on each side of gates and other fence openings.

    a. Bond metal gates to gate posts.
    b. Bond across openings, with and without gates, except openings indicated as intentional fence discontinuities. Use No. 2 AWG wire and bury it at least 18 inches (457 mm) below finished grade.

B. Protection at Crossings of Overhead Electrical Power Lines: Ground fence at location of crossing and at a ground rod located a maximum distance of 150 feet (45 m) on each side of crossing.

C. Fences Enclosing Electrical Power Distribution Equipment: Ground according to IEEE C2 unless otherwise indicated.

D. Grounding Method: At each grounding location, drive a grounding rod vertically until the top is 6 inches (152 mm) below finished grade. Connect rod to fence with No. 6 AWG conductor. Connect conductor to each fence component at grounding location.

1. Make grounding connections to each barbed wire strand with wire-to-wire connectors designed for this purpose.
2. Make grounding connections to each barbed tape coil with connectors designed for this purpose.

E. Connections:

1. Make connections with clean, bare metal at points of contact.
2. Make aluminum-to-steel connections with stainless steel separators and mechanical clamps.

3. Make aluminum-to-galvanized-steel connections with tin-plated copper jumpers and mechanical clamps.
4. Make above-grade ground connections with mechanical fasteners.
5. Make below-grade ground connections with exothermic welds.
6. Coat and seal connections having dissimilar metals with inert material to prevent future penetration of moisture to contact surfaces.

F. Bonding to Lightning Protection System: Ground fence and bond fence grounding conductor to lightning protection down conductor or lightning protection grounding conductor according to NFPA 780.

3.6 FIELD QUALITY CONTROL

A. Testing Agency: Engage qualified testing agency to perform tests.

B. Grounding Tests: Comply with requirements.

C. Prepare test reports.

3.7 ADJUSTING

A. Gates: Adjust gates to operate smoothly, easily, and quietly, free of binding, warp, excessive deflection, distortion, nonalignment, misplacement, disruption, or malfunction, throughout entire operational range. Confirm that latches and locks engage accurately and securely without forcing or binding.

B. Lubricate hardware and other moving parts.

3.8 DEMONSTRATION

A. Engage factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain chain-link fences and gates.

END OF SECTION 323113

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SECTION 329200 - TURF AND GRASSES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Seeding.
2. Hydroseeding.
3. Sodding.
4. Plugging.
5. Sprigging.
6. Meadow grasses and wildflowers.
7. Turf renovation.
8. Erosion-control material(s).
9. Grass paving.

1.3 DEFINITIONS

A. Finish Grade: Elevation of finished surface of planting soil.

B. Pesticide: A substance or mixture intended for preventing, destroying, repelling, or mitigating a pest. Pesticides include insecticides, miticides, herbicides, fungicides, rodenticides, and molluscicides. They also include substances or mixtures intended for use as a plant regulator, defoliant, or desiccant.

C. Pests: Living organisms that occur where they are not desired or that cause damage to plants, animals, or people. Pests include insects, mites, grubs, mollusks (snails and slugs), rodents (gophers, moles, and mice), unwanted plants (weeds), fungi, bacteria, and viruses.

D. Planting Soil: Existing, on-site soil; imported soil; or manufactured soil that has been modified with soil amendments and perhaps fertilizers to produce a soil mixture best for plant growth.

E. Subgrade: The surface or elevation of subsoil remaining after excavation is complete, or the top surface of a fill or backfill before planting soil is placed.

1.4 PRE-INSTALLATION MEETINGS

A. Pre-installation Conference: Conduct conference at Project Site.

1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For landscape Installer.

B. Certification of Grass Seed: From seed vendor for each grass-seed monostand or mixture, stating the botanical and common name, percentage by weight of each species and variety, and percentage of purity, germination, and weed seed. Include year of production and date of packaging:

1. Certification of each seed mixture for sod. Include identification of source and name and telephone number of supplier.

C. Product Certificates: For fertilizers, from manufacturer.

D. Pesticides and Herbicides: Product label and manufacturer's application instructions specific to Project.

1.6 CLOSEOUT SUBMITTALS

A. Maintenance Data: Recommended procedures to be established by Owner for maintenance of turf during a calendar year. Submit before expiration of required maintenance periods.

1.7 QUALITY ASSURANCE

A. Installer Qualifications: A qualified landscape installer whose work has resulted in successful turf establishment:

1. Professional Membership: Installer shall be a member in good standing of the National Association of Landscape Professionals.
2. Experience: Five years' experience in turf installation.
3. Installer's Field Supervision: Require Installer to maintain an experienced full-time supervisor on Project site when work is in progress.
4. Personnel Certifications: Installer's field supervisor shall have certification in all of the following categories from the National Association of Landscape Professionals:

    a. Landscape Industry Certified Technician - Exterior.
    b. Landscape Industry Certified Lawncare Manager.
    c. Landscape Industry Certified Lawncare Technician.

5. Pesticide Applicator: State licensed, commercial.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Seed and Other Packaged Materials: Deliver packaged materials in original, unopened containers showing weight, certified analysis, name and address of manufacturer, and indication of compliance with state and Federal laws, as applicable.

B. Sod: Harvest, deliver, store, and handle sod according to requirements in the Turfgrass Producers International's (TPI) "Specifications for Turfgrass Sod Materials" and "Specifications for Turfgrass Sod Transplanting and Installation" sections in TPI's "Guideline Specifications to Turfgrass Sodding." Deliver sod within 24 hours of harvesting and in time for planting promptly. Protect sod from breakage and drying.

C. Bulk Materials:

1. Do not dump or store bulk materials near structures, utilities, walkways and pavements, or on existing turf areas or plants.
2. Provide erosion-control measures to prevent erosion or displacement of bulk materials; discharge of soil-bearing water runoff; and airborne dust reaching adjacent properties, water conveyance systems, or walkways.
3. Accompany each delivery of bulk materials with appropriate certificates.

1.9 FIELD CONDITIONS

A. Weather Limitations: Proceed with planting only when existing and forecasted weather conditions permit planting to be performed when beneficial and optimum results may be obtained. Apply products during favorable weather conditions according to manufacturer's written instructions.

PART 2 - PRODUCTS

2.1 TURFGRASS SOD

A. Turfgrass Sod: Number 1 Quality/Premium, including limitations on thatch, weeds, diseases, nematodes, and insects, complying with "Specifications for Turfgrass Sod Materials" in TPI's "Guideline Specifications to Turfgrass Sodding." Furnish viable sod of uniform density, color, and texture that is strongly rooted and capable of vigorous growth and development when planted.

B. Turfgrass Species: St. Augustinegrass (Stenotaphrum secundatum**)**.

2.2 FERTILIZERS

A. Commercial Fertilizer: Commercial-grade complete fertilizer of neutral character, consisting of fast- and slow-release nitrogen, 50 percent derived from natural organic sources of urea formaldehyde, phosphorous, and potassium in the following composition:

1. Composition: Nitrogen, phosphorous, and potassium in amounts recommended in soil reports from a qualified soil-testing laboratory.

B. Slow-Release Fertilizer: Granular or pelleted fertilizer consisting of 50 percent water-insoluble nitrogen, phosphorus, and potassium in the following composition:

1. Composition: Nitrogen, phosphorous, and potassium in amounts recommended in soil reports from a qualified soil-testing laboratory.

2.3 LIME

A. Description: Agricultural limestone containing a minimum of 80 percent calcium carbonate equivalent.

B. Comply with ASTM C602.

2.4 EROSION-CONTROL MATERIALS

A. Erosion-Control Blankets: Biodegradable wood excelsior, straw, or coconut-fiber mat enclosed in a photodegradable plastic mesh. Include manufacturer's recommended steel wire staples, 6 inches (150 mm) long.

B. Erosion-Control Fiber Mesh: Biodegradable burlap or spun-coir mesh, a minimum of 0.92 lb/sq. yd. (0.5 kg/sq. m), with 50 to 65 percent open area. Include manufacturer's recommended steel wire staples, 6 inches (150 mm) long.

C. Erosion-Control Mats: Cellular, nonbiodegradable slope-stabilization mats designed to isolate and contain small areas of soil over steeply sloped surface, of 6-inch (150-mm) nominal mat thickness. Include manufacturer's recommended anchorage system for slope conditions.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas to be planted for compliance with requirements and other conditions affecting installation and performance of the Work:

1. Verify that no foreign or deleterious material or liquid such as paint, paint washout, concrete slurry, concrete layers or chunks, cement, plaster, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, or acid has been deposited in soil within a planting area.
2. Suspend planting operations during periods of excessive soil moisture until the moisture content reaches acceptable levels to attain the required results.
3. Uniformly moisten excessively dry soil that is not workable or which is dusty.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

C. If contamination by foreign or deleterious material or liquid is present in soil within a planting area, remove the soil and contamination as directed by Architect and replace with new planting soil.

3.2 PREPARATION

A. Protect structures; utilities; sidewalks; pavements; and other facilities, trees, shrubs, and plantings from damage caused by planting operations:

1. Protect adjacent and adjoining areas from hydroseeding and hydromulching overspray.
2. Protect grade stakes set by others until directed to remove them.

B. Install erosion-control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.

3.3 TURF AREA PREPARATION

A. General: Prepare planting area for soil placement and mix planting soil.

B. Placing Planting Soil: Place and mix planting soil in place over exposed subgrade.

1. Reduce elevation of planting soil to allow for soil thickness of sod.

C. Moisten prepared area before planting if soil is dry. Water thoroughly and allow surface to dry before planting. Do not create muddy soil.

D. Before planting, obtain Architect's acceptance of finish grading; restore planting areas if eroded or otherwise disturbed after finish grading.

3.4 PREPARATION FOR EROSION-CONTROL MATERIALS

A. Prepare area as specified in "Turf Area Preparation" Article in Part 3.

B. For erosion-control mats, install planting soil in two lifts, with second lift equal to thickness of erosion-control mats. Install erosion-control mat and fasten as recommended by material manufacturer.

C. Fill cells of erosion-control mat with planting soil and compact before planting.

D. For erosion-control blanket or mesh, install from top of slope, working downward, and as recommended by material manufacturer for site conditions. Fasten as recommended by material manufacturer.

E. Moisten prepared area before planting if surface is dry. Water thoroughly and allow surface to dry before planting. Do not create muddy soil.

3.5 SODDING

A. Lay sod within 24 hours of harvesting. Do not lay sod if dormant or if ground is frozen or muddy.

B. Lay sod to form a solid mass with tightly fitted joints. Butt ends and sides of sod; do not stretch or overlap. Stagger sod strips or pads to offset joints in adjacent courses. Avoid damage to soil or sod during installation. Tamp and roll lightly to ensure contact with soil, eliminate air pockets, and form a smooth surface. Work sifted soil or fine sand into minor cracks between pieces of sod; remove excess to avoid smothering sod and adjacent grass:

1. Lay sod across slopes exceeding 1:3.
2. Anchor sod on slopes exceeding 1:6 with wood pegs spaced as recommended by sod manufacturer but not less than two anchors per sod strip to prevent slippage.

C. Saturate sod with fine water spray within two hours of planting. During first week after planting, water daily or more frequently as necessary to maintain moist soil to a minimum depth of 1-1/2 inches (38 mm) below sod.

3.6 TURF RENOVATION

A. Renovate existing turf where indicated.

B. Renovate turf damaged by Contractor's operations, such as storage of materials or equipment and movement of vehicles:

1. Reestablish turf where settlement or washouts occur or where minor regrading is required.
2. Install new planting soil as required.

C. Remove sod and vegetation from diseased or unsatisfactory turf areas; do not bury in soil.

D. Remove topsoil containing foreign materials, such as oil drippings, fuel spills, stones, gravel, and other construction materials resulting from Contractor's operations, and replace with new planting soil.

E. Mow, dethatch, core aerate, and rake existing turf.

F. Remove weeds before seeding. Where weeds are extensive, apply selective herbicides as required. Do not use pre-emergence herbicides.

G. Remove waste and foreign materials, including weeds, soil cores, grass, vegetation, and turf, and legally dispose of them off Owner's property.

H. Till stripped, bare, and compacted areas thoroughly to a soil depth of 6 inches (150 mm).

I. Water newly planted areas and keep moist until new turf is established.

3.7 TURF MAINTENANCE

A. General: Maintain and establish turf by watering, fertilizing, weeding, mowing, trimming, replanting, and performing other operations as required to establish healthy, viable turf. Roll, regrade, and replant bare or eroded areas and re-mulch to produce a uniformly smooth turf. Provide materials and installation the same as those used in the original installation.

1. Fill in as necessary soil subsidence that may occur because of settling or other processes. Replace materials and turf damaged or lost in areas of subsidence.
2. In areas where mulch has been disturbed by wind or maintenance operations, add new mulch and anchor as required to prevent displacement.
3. Apply treatments as required to keep turf and soil free of pests and pathogens or disease. Use integrated pest management practices whenever possible to minimize the use of pesticides and reduce hazards.

B. Watering: Install and maintain temporary piping, hoses, and turf-watering equipment to convey water from sources and to keep turf uniformly moist to a depth of 4 inches (100 mm):

1. Schedule watering to prevent wilting, puddling, erosion, and displacement of seed or mulch. Lay out temporary watering system to avoid walking over muddy or newly planted areas.
2. Water turf with fine spray at a minimum rate of 1-inch (25 mm) per week unless rainfall precipitation is adequate.

C. Mow turf as soon as top growth is tall enough to cut. Repeat mowing to maintain specified height without cutting more than one-third of grass height. Remove no more than one-third of grass-leaf growth in initial or subsequent mowings. Do not delay mowing until grass blades bend over and become matted. Do not mow when grass is wet.

3.8 CLEANUP AND PROTECTION

A. Promptly remove soil and debris created by turf work from paved areas. Clean wheels of vehicles before leaving site to avoid tracking soil onto roads, walks, or other paved areas.

B. Remove surplus soil and waste material, including excess subsoil, unsuitable soil, trash, and debris, and legally dispose of them off Owner's property.

C. Erect temporary fencing or barricades and warning signs as required to protect newly planted areas from traffic. Maintain fencing and barricades throughout initial maintenance period and remove after plantings are established.

D. Remove nondegradable erosion-control measures after grass establishment period.

3.9 MAINTENANCE SERVICE

A. Turf Maintenance Service: Provide full maintenance by skilled employees of landscape Installer. Maintain as required in "Turf Maintenance" Article. Begin maintenance immediately after each area is planted and continue until acceptable turf is established, but for not less than the following periods:

1. Sodded Turf: 60 days from date of planting completion.

END OF SECTION 329200

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SECTION 330509.33 - THRUST RESTRAINT FOR UTILITY PIPING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

B. All work shall comply and be installed per latest City of Titusville Water Resources Department Technical Specifications (May 2022 or later), including Section 3.0 General Design and Construction Standards, Section 5.0 Sewer and Forcemain Design and Construction Standards, and Appendix A Approved Vendor List.

1.2 SUMMARY

A. Section Includes:

1. Mechanical joint restraints.

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SECTION 330513 - MANHOLES AND STRUCTURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

B. All work shall comply and be installed per latest City of Titusville Water Resources Department Technical Specifications (May 2022 or later), including Section 3.0 General Design and Construction Standards, Section 5.0 Sewer and Forcemain Design and Construction Standards, and Appendix A Approved Vendor List.

1.2 SUMMARY

A. Section Includes:

1. Modular precast concrete manholes with tongue-and-groove joints and monolithic base sections, covers, anchorage, and accessories.
2. Bedding and cover materials.
3. Manhole testing and inspection.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 FIELD QUALITY CONTROL

A. This section shall supplement test and inspection measures described in Section 5.0 of the City of Titusville Water Resources Department Technical Specifications.

B. Manhole lift holes shall be sealed with non-shrinking mortar or other material approved by the City of Titusville prior to application of interior linings and exterior coatings.

C. Every manhole structure installed under this Contract shall be visually inspected for damage and leakage within manhole and at pipe connections.

D. Testing shall be completed on every manhole structure installed under this Contract.

1. Manholes shall be air (vacuum) tested for watertightness prior to placing into service.
2. Air (vacuum) testing shall conform to ASTM C1244 (latest edition).
3. Engineer shall be present to witness all tests.
4. Protect all manholes being tested to prevent damage. Contractor shall be responsible for repair of any damages resulting from testing.

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SECTION 330516.13 - PRECAST CONCRETE UTILITY STRUCTURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

B. All work shall comply and be installed per latest City of Titusville Water Resources Department Technical Specifications (May 2022 or later), including Section 3.0 General Design and Construction Standards, Section 6.0 Lift Station Design and Construction Standards, and Appendix A Approved Vendor List.

1.2 SUMMARY

A. Section Includes:

1. Modular precast concrete wet well structure.

1.3 ACTION SUBMITTALS

A. Shop Drawings:

1. Base sections, riser sections, eccentric and concentric conical top sections, flat slab tops, grade rings with notarized certificate indicating compliance with ASTM C478 and City of Titusville standards.
2. Cut sheets indicating location, orientation size and elevation of finished inverts for all penetrations for each structure.
3. Calculations.

B. All shop drawings and calculations for precast utility structures shall be signed and sealed by a Professional Engineer registered in the state of Florida.

1.4 INFORMATIONAL SUBMITTALS

A. Manufacturer's Certificate: Products meet or exceed specified requirements.

B. Manufacturer Instructions: Detailed instructions on installation requirements, including storage and handling procedures.

C. Field Quality-Control Submittals: Results of Contractor-furnished tests and inspections.

D. Qualifications Statements: Qualifications for manufacturer.

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1.5 QUALITY ASSURANCE

A. Obtain all modular precast concrete utility structure pieces from a single source.

B. Perform Work according to NPCA Quality Control Manual for Precast and Prestressed Concrete Plants.

C. At least three cylinders will be taken each day that utility structure sections are cast, with batch samples to be designated by laboratory representative. At least one set of cylinders will be taken from each 8 cubic yards of concrete used in utility structure section construction. These samples will be tested for strength. If the samples fail to meet specified minimum concrete strength requirements, all sections manufactured from the concrete from which the cylinders were made will be rejected.

D. The OWNER reserves the right to core structures either at the job site or point of delivery to validate strength of concrete and placement of steel. If cores fail to demonstrate the required strength or indicate incorrect placement of reinforcing steel, all sections not previously tested will be considered rejected until sufficient additional cores are tested, at no increase in Contract Amount, to substantiate conformance to these requirements.

E. The quality of all materials, the process of manufacture, and the finished sections shall be subject to inspection and approval by the Engineer, or other representative of the Owner. Such inspection may be made at the place of manufacture, or on the work after delivery, or at both places and the materials shall be subject to rejection at any time on account of failure to meet any of the requirements specified herein; even though samples may have been accepted as satisfactory at the place of manufacture. Material rejected after delivery to the job shall be marked for identification and shall be removed from the job at once. All materials which have been damaged after delivery will be rejected, and if already installed, shall be acceptably repaired, if permitted, or removed and replaced, entirely at the Contractor's expense.

F. Perform Work according to City of Titusville standards.

1.6 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing products specified in this Section with minimum three years' experience.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Inspection: Accept precast structures on Site in manufacturer's original packaging and inspect for damage.

B. Comply with precast concrete manufacturer instructions for unloading, storing, and handling precast structures.

C. Lift structures from designated lifting points.

D. Storage:

1. Store precast concrete structures to prevent damage to Owner's property or other public or private property.
2. Repair property damaged from materials storage.

PART 2 - PRODUCTS

2.1 PRECAST CONCRETE UTILITY STRUCTURES

A. Wet well: Provide precast concrete structure per City of Titusville standards.

2.2 ACCESS HATCHES

A. Access Hatch: As specified in Section 083483 “Floor Doors”.

2.3

2.3 FINISHES

A. Interior Coating: All interior services shall be coated with one of the following liners.

1. GSE StudLiner by Gundle/SLT Environmental, Inc.
2. Agru Sure Grip Concrete Protective Liner by Agru America, Inc.
3. City approved equal.

B. Exterior Coating: Exterior of utility structure shall be coated with two coats of one of the following sealants. Each coat shall have dry film thickness of 3.8 millimeters.

1. EpoxyConSeal CS-55 by Concrete Sealants, Inc.
2. City approved equal.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that items provided by other Sections of Work are properly sized and located.

B. Verify that built-in items are in proper location and ready for roughing into Work.

C. Verify correct size of structure excavation.

D. Verify that subgrade and bedding are properly prepared, compacted, and ready to receive Work of this Section.

3.2 PREPARATION

A. Mark each precast structure by indentation or using waterproof paint showing date of manufacture, manufacturer, and identifying symbols and numbers shown on Drawings to indicate its intended use.

B. Coordinate placement of inlet and outlet pipe or duct sleeves required by other Sections.

C. Do not install structures if Site conditions induce loads exceeding weight capacity of structures.

D. Inspect precast concrete structures immediately prior to placement in excavation to verify that they are internally clean and free from damage; remove and replace damaged units.

3.3 INSTALLATION

A. Install Excavation and Backfill:

1. Excavate structures in location and to indicated depth.
2. Provide clearance around sidewalls of structure for construction operations.
3. When groundwater is encountered, prevent accumulation of water in excavations; place structures in dry trench.
4. Where possibility exists of watertight structure becoming buoyant in flooded excavation, anchor structure to avoid flotation as approved by Engineer.

B. Place structure sections plumb and level, trim to correct elevations, and anchor to base section.

C. Backfill excavations for structures as specified in Section 312000 “Earthwork.”

D. Set frames and hatches level without tipping and to correct elevations.

E. Coordinate with other Sections of Work to provide correct size, shape, and location.

F. Precast Concrete Structures:

1. Lift precast components at lifting points designated by manufacturer.
2. When lowering structures into excavations and joining pipe to units, take precautions to ensure that interior of pipeline and structure remains clean.
3. Set precast structures bearing firmly and fully on crushed stone bedding, compacted as specified in Section 312000 “Earthwork” or on other support system as indicated on Drawings.
4. Assemble multi-section structures by lowering each section into excavation; set level and firmly position base section before placing additional sections.
5. Remove foreign materials from joint surfaces and verify sealing materials are placed properly.
6. Maintain alignment between sections by using guide devices affixed to lower section.
7. Joint sealing materials may be installed on Site or at manufacturer's plant.
8. Verify that installed structures meet required alignment and grade.

9. Remove knockouts or cut structure to receive piping without creating openings larger than required to receive pipe; fill annular spaces with mortar.

3.4 FIELD QUALITY CONTROL

A. Test concrete structure sections according to ASTM C497.

B. Leakage Tests:

1. Performed on every structure with Engineer observing.
2. Preparation:

   a. Prior to placing the shelf and invert, and pointing the horizontal joints, fill all lifting holes within 6 feet of ground surface with approved non-shrinking mortar.
   b. Lower groundwater table as required.
   c. Plug all pipes and other openings into structure.

3. Test:

   a. Fill water to top of cone section.
   b. Observe for visible water in the excavated area.
   c. If area around structure is backfilled or the test is unsatisfactory, repeat the test allowing for suitable time for absorption of water in excavated area.
   d. At the end of the absorption period, refill structure and wait 8 hours.
   e. Refill the cone at the end of 8 hours, measuring the amount required to refill.
   f. Extrapolate to determine 24-rate of leakage. Do not allow leakage to exceed 1 gallon per vertical foot in a 24-hour period.
   g. Engineer will perform visual inspection along with Contractor.

4. Repair:

   a. If leakage is less than 3 gallons per vertical foot per 24 hours, make approved repairs to the structure and retest, if it is determined the leakage is due to defects in the joints or sections.
   b. If leakage is 3 gallons or more, then replace the entire structure, including all joints and sections at Contractor’s expense. Retest the new structure as described above.

C. A vacuum test may be substituted for a leakage test as follows:

1. The filling and pointing of exterior joints are not required where the excavation has not been backfilled.
2. Inflate to affect a seal between the vacuum base and the top of the structure.
3. Connect the vacuum pump to the outlet port with the valve open and a vacuum of 10 inch Hg (20 inch of Hg absolute) drawn.
4. Close the valve.
5. If the pressure drop exceeds the acceptable limits, make necessary repairs as approved by the Engineer, and:

a. Re-test the structure.
b. If the structure fails to meet the minimum requirements of the vacuum test retest using the leakage test.

6. Upon completion of successful vacuum test, the interior and exterior joints shall be filled and pointed.

3.5 CLEANING

A. Clean all new structures to be free of silt, debris and foreign matter of any kind, prior to final inspection.

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SECTION 330526 - UTILITY IDENTIFICATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

B. All work shall comply and be installed per latest City of Titusville Water Resources Department Technical Specifications (May 2022 or later), including Section 3.0 General Design and Construction Standards and Appendix A Approved Vendor List.

1.2 SUMMARY

A. Section Includes:

1. Plastic ribbon tape for placement above direct-buried utility.
2. Trace wire for placement above direct-buried utility.

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SECTION 333113 - PUBLIC SANITARY UTILITY SEWERAGE PIPING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

B. All work shall comply and be installed per latest City of Titusville Water Resources Department Technical Specifications (May 2022 or later), including Section 3.0 General Design and Construction Standards, Section 5.0 Sewer and Forcemain Design and Construction Standards, and Appendix A Approved Vendor List.

1.2 SUMMARY

A. Section Includes:

a. Sanitary sewerage gravity pipe and fittings.
b. Pipe markers.
c. Connection to manholes.
d. Bedding and cover materials.
e. Gravity sewer system testing.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 FIELD QUALITY CONTROL

A. This section shall supplement the test and inspection measures described in Section 5.0 of the City of Titusville Water Resources Department Technical Specifications.

B. Test all new and modified sanitary sewer pipe systems. Engineer shall be present to witness all tests.

C. Protect all sewer lines being tested to prevent damage. Contractor shall be responsible for repair of any damages resulting from testing.

D. Leakage Testing of Gravity Sewer Piping:

a. Low pressure air testing shall be required under this Contract.

a) Paragraph 5.24.1 of the aforementioned City of Titusville Technical Specifications shall be modified as follows: “Air testing will be required by the City. Testing will conform with 10 psi for a period of

5 minutes. Air test shall be conducted in accordance with ASTM F1417."

b) Delete Paragraph 5.24.1.1.
c) Delete Paragraph 5.24.1.2.

b.

b. Water (hydrostatic) testing may be used as a substitute leakage test with approval from City of Titusville.

a) Maximum Allowable Exfiltration or Infiltration: 100 gal/inch of pipe diameter for each mile per day for each reach of piping undergoing testing.
b) Perform testing with minimum positive head of 2 feet.
c) Include allowances for leakage from manholes.

E. Deflection Testing of Plastic Gravity Sewer Piping:

a) Vertical Ring Deflection Testing: Shall be performed on PVC sewer piping after backfilling has been in place for 30 days but not longer than 12 months.
b) Allowable Maximum Deflection: For installed plastic sewer pipe; not greater than 5 percent of original vertical internal diameter.
c) Deflection Testing: Using properly sized rigid ball or "go, no go" mandrel.
d) Furnish rigid ball or mandrel with diameter not less than 95 percent of base or average inside diameter of pipe, as determined by ASTM standard to which pipe is manufactured.
e) Measure pipe diameter in compliance with ASTM D2122.
f) Perform testing without mechanical pulling devices.
g) Locate, excavate, replace, and retest piping that exceeds allowable deflection.

END OF SECTION 333113

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SECTION 333400 - SANITARY UTILITY SEWERAGE FORCE MAINS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

B. All work shall comply and be installed per latest City of Titusville Water Resources Department Technical Specifications (May 2022 or later), including Section 3.0 General Design and Construction Standards, Section 5.0 Sewer and Forcemain Design and Construction Standards, and Appendix A Approved Vendor List.

1.2 SUMMARY

A. Section Includes:

1. Force mains.
2. Bedding and cover materials.

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SECTION 400506 - COUPLINGS, ADAPTERS, AND SPECIALS FOR PROCESS PIPING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Pipe penetrations.
2. Sleeve-type couplings.

B. Related Requirements:

1. Section 055000 “Metal Fabrications” for miscellaneous metalwork and fasteners as required by this Section.
2. Product and execution requirements for painting specified by this Section.
3. Section 400507 “Hangers and Supports for Process Piping” for hangers, anchors, sleeves, and sealing of piping to adjacent structures.
4. Section 400519 “Ductile Iron Process Pipe” for ductile-iron piping materials and appurtenances.
5. Section 400531 “Thermoplastic Process Pipe” for plastic piping materials and appurtenances.
6. Section 400551 “Common Requirements for Process Valves” for common product requirements for valves for placement by this Section.

1.3 DEFINITIONS

A. Firestopping (Through-Penetration Protection System): The sealing or stuffing material or assembly placed in spaces between and penetrations through building materials to arrest movement of fire, smoke, heat, and hot gases through fire-rated construction.

B. FM: Factory Mutual Insurance Company; FM Global is the communicative name of the company.

C. WH: Warnock Hersey; indicates compliance to relevant building codes, association criteria, and product safety and performance standards.

1.4 COORDINATION

A. Coordinate Work of this Section with installation of piping, valves and equipment connections specified in other Sections and indicated on Drawings.

1.5 ACTION SUBMITTALS

A. Product Data:

1. Submit manufacturer catalog information for each specified product, including installation instructions.
2. Firestopping: Submit data on product characteristics, performance, and limitation criteria.
3. Flexible Pipe Connectors: Indicate maximum temperature and pressure rating, face-to-face length, live length, hose wall thickness, hose convolutions per foot and per assembly, fundamental frequency of assembly, braid structure, and total number of wires in braid.
4. Expansion Joints: Indicate maximum temperature, pressure rating, and expansion compensation.

B. Shop Drawings:

1. Identification:

   a. Submit list of wording, symbols, letter size, and color coding for pipe identification.
   b. Comply with ASME A13.1.

2. Submit layout drawings showing piece numbers and location, indicating restrained joint locations.
3. Indicate layout of piping systems, including flexible connectors, expansion joints and compensators, loops, offsets, and swing joints.

C. Firestopping Schedule: Submit schedule of opening locations and sizes, penetrating items, and required listed design numbers to seal openings for maintenance of fire-resistance rating of adjacent assembly.

1.6 INFORMATIONAL SUBMITTALS

A. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

B. Welder Certificates: Certify welders and welding procedures employed on Work, verifying AWS qualification within previous 12 months.

C. Manufacturer Instructions: Submit special procedures and setting dimensions.

D. Source Quality-Control Submittals: Indicate results of factory tests and inspections.

E. Field Quality-Control Submittals: Indicate results of Contractor-furnished tests and inspections.

F. Qualifications Statements:

1. Submit qualifications for manufacturer, installer, and licensed professional.
2. Submit manufacturer's approval of installer.
3. Welders: Qualify procedures and personnel according to AWS D1.1/D1.1M.

1.7 CLOSEOUT SUBMITTALS

A. Project Record Documents: Record actual locations of piping appurtenances.

B. Identify and describe unexpected variations to pipe routing or discovery of uncharted utilities.

1.8 QUALITY ASSURANCE

A. Materials in Contact with Potable Water: Certified to NSF Standards 61 and 372.

B. Perform Work according to ASME B31.9 for installation of piping systems and according to AWS D1.1/D1.1M for welding materials and procedures.

C. Perform Work according to applicable code for installation of piping systems.

D. Through-Penetration Firestopping of Fire-Rated Assemblies:

1. Comply with UL 1479 or ASTM E814.
2. Minimum Positive Pressure Differential: 0.1-inch wg (24.9 Pa) to achieve fire F-ratings and temperature T-ratings as indicated on Drawings, but not less than one-hour.
3. Wall Penetrations: Fire F-ratings as indicated on Drawings, but not less than one-hour.
4. Floor Penetrations:

    a. Fire F-ratings and Temperature T-ratings: As indicated on Drawings, but not less than one-hour.
    b. Floor Penetrations within Wall Cavities: T-rating is not required.

E. Through-Penetration Firestopping of Non-fire-rated Floor Assemblies:

1. Materials to resist free passage of flame and products of combustion.
2. Noncombustible Penetrating Items: Noncombustible materials for penetrating items connecting maximum of three stories.
3. Penetrating Items: Materials approved by authorities having jurisdiction for penetrating items connecting maximum of two stories.

F. Fire-Resistive Joints in Fire-Rated Floor, Roof, and Wall Assemblies:

1. Comply with ASTM E1966 or UL 2079.
2. Rating: As indicated on Drawings for assembly in which joint is installed.

G. Fire-Resistive Joints between Floor Slabs and Exterior Walls:

1. Comply with ASTM E119.
2. Minimum Positive Pressure Differential: 0.1-inch wg (24.9 Pa) to achieve fire-resistance rating as indicated on Drawings for floor assembly.

H. Surface-Burning Characteristics: Maximum 25/450 flame-spread/smoke-developed index when tested according to ASTM E84.

1.9 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing products specified in this Section with minimum five years' documented experience.

B. Welders: AWS qualified within previous 12 months for employed weld types.

C. Licensed Professional: Professional engineer experienced in design of specified Work and licensed in State of Florida.

1.10 DELIVERY, STORAGE, AND HANDLING

A. Inspection: Accept materials on Site in manufacturer's original packaging and inspect for damage.

B. Store materials according to manufacturer instructions.

C. Protection:

1. Protect materials from moisture and dust by storing in clean, dry location remote from construction operations areas.
2. Furnish temporary end caps and closures on piping and fittings and maintain in place until installation.
3. Provide additional protection according to manufacturer instructions.

1.11 EXISTING CONDITIONS

A. Field Measurements:

1. Verify field measurements prior to fabrication.
2. Indicate field measurements on Shop Drawings.

PART 2 - PRODUCTS

2.1 PIPE PENETRATIONS

A. Performance and Design Criteria:

1. Firestop interruptions to fire-rated assemblies, materials, and components.
2. Firestopping: Provide certificate of compliance from authority having jurisdiction, indicating approval of materials used.

2.2 PIPE SLEEVES

A. All construction except new concrete walls:

1. Material: Schedule 40 galvanized steel conforming to ASTM A53.
2. 2-inch minimum circumference water stop welded to exterior sleeve at midpoint.
3. Ends cut and ground to be:

    a. Flush with ground.
    b. Flush with ceiling.
    c. 2 inches above finished floors.
    d. Sealed with caulking.
    e. Sized as required.

B. New concrete walls with pipes up to 20 inches in diameter:

1. Material: non-metallic High-Density Polyethylene Sleeves (HDPE).
2. Integral hollow molded water stops.

    a. 4 inches larger than the outside diameter of sleeve.

3. End caps for forming and reinforcing ribs.
4. Domestically manufactured by:

    a. Century-Line as manufactured by Pipeline Seal & Insulator, Inc., Houston, TX, or equal.

C. New concrete with pipes 20 to 60 inches in diameter:

1. Material: molded HDPE modular interlocking discs to make width of the wall.

    a. Corrugated.
    b. Cell-Cast as manufactured by Pipeline Seal & Insulator, Inc., Houston, TX, or equal.

D. External wall penetrations:

1. 36-inch diameter and less may be made by means of a ductile iron sleeve capable of being bolted directly to the formwork.
2. Seal of the annular space between the carrier pipe and the sleeve made by means of a confined rubber gasket and be capable of withstanding 350 psi.
3. Sleeve to have an integrally cast waterstop of 1/2-inch minimum thickness, 2-1/2-inches minimum height.
4. Manufacturers: Omni-Sleeve, Malden, MA or equal.

E. Tapping Sleeves:

1. Manufacturers:

    a. Ford Series FTSS.
    b. JCM Model 432.
    c. Muller Series H304 S/S.
    d. Smith Blair Series 663.

2.3 WALL CASTINGS

A. Ductile iron conforming to ANSI/AWWA A21.51/C151, thickness Class 53.

B. Diameter as required.

C. Flanges and/or mechanical joint bells drilled and tapped for studs where flush with the wall.

D. Castings provided with a 2-inch minimum circumferential flange/waterstop integrally cast with or welded to the casting.

E. Located as follows:

1. For castings set flush with walls: located at center of the overall length of the casting,
2. For castings which extend through wall: located within middle third of the wall.

2.4 SEALING MATERIALS

A. Mechanical seals:

1. Of rubber links shaped to continuously fill annular space between pipe and wall opening or sleeve.
2. Link pressure plates molded of glass reinforced nylon:

    a. Colored throughout elastomer.
    b. Permanent identification of the size and manufacturer's name molded into the pressure plate and sealing element.

3. Hardware:

    a. Mild steel with a 60,000 psi minimum tensile strength.
    b. 2-part Zinc Dichromate coating per ASTM B633.
    c. Organic Coating, tested in accordance with ASTM B117 to pass a 1,500-hour salt spray test.
    d. Use Type 316 Stainless Steel hardware:

        1) In chemical areas.
        2) For submerged service.
        3) For penetrations in tanks containing sludge or wastewater.

4. Completed sealing system:

    a. Duty pressure rated for 20 psig differential pressure.
    b. EPDM for all services except fire rated assemblies.

        1) Fire rated seals use silicone link material.

    c. Manufacturers:

1) PSI-Thunderline/ Link-Seal as manufactured by Pipeline Seal & Insulator, Inc., Houston, TX, or pre-approved equal.
2) Advance Products & Systems, Inc.
3) Fernco Inc.
4) Flexicraft Industries.
5) GPT; an EnPro Industries company.

B. Sealant:

1. A two-part foamed silicone elastomer manufactured by:

a. Dow Corning Co., Product No. 3-6548 silicone R.T.V.
b. 3M brand fire barrier products caulk C.P. 25 and 3M brand moldable putty MP+.
c. Flame-Safe fire stop systems FS-900 by Rectorseal.

2. Sealant bead configuration, depth and width in accordance with manufacturer's recommendations.

2.5 MISCELLANEOUS MATERIALS

A. Bonding compound:

1. Sikadur Hi-Mod epoxy by Sika Corp.
2. Euco 452 by Euclid Chemical Corp.; Master Builders Company.
3. Or equal.

B. Non-shrink grout:

1. Masterflow 713 by Master Builders Co.
2. Euco NS by Euclid Chemical Co.
3. Five Star Grout by U.S. Grout Corp.
4. Or equal.

2.6 SLEEVE-TYPE COUPLINGS

A. Manufacturers:

1. ROMAC DJ400.
2. Or Engineer Approved Equal.

B. Description:

1. Minimum pressure rating: 150 psi.
2. Fasteners and Tie Rods: Type 316 SS.
3. Materials: ASTM A536 Ductile Iron.
4. Gaskets:

a. Material: Buna-N.
b. Comply with ASTM D2000.

C. Finishes:

1. Factory fusion bonded epoxy coated.

2.7 FINISHES

A. Prepare piping appurtenances for field finishes.

2.8 SOURCE QUALITY CONTROL

A. Provide shop inspection and testing of completed assemblies.

B. Certificate of Compliance:

1. If manufacturer is approved by authorities having jurisdiction, submit certificate of compliance indicating Work performed at manufacturer's facility conforms to Contract Documents.
2. Specified shop tests are not required for Work performed by approved manufacturer.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that field dimensions are as indicated on Shop Drawings.

B. Inspect existing flanges for nonstandard bolthole configurations or design and verify that new pipe and flanges mate properly.

C. Verify that openings are ready to receive sleeves.

D. Verify that pipe plain ends to receive sleeve-type couplings are smooth and round for 12 inches (305 mm) from pipe ends.

E. Verify that pipe outside diameter conforms to sleeve manufacturer's requirements.

3.2 PREPARATION

A. Cleaning: Thoroughly clean end connections before installation.

B. Close pipe and equipment openings with caps or plugs during installation.

C. Surface Preparation: Clean surfaces to remove foreign substances.

3.3 INSTALLATION

A. According to ASME B31.3.

B. Coating: Finish piping appurtenances.

C. Pipe Penetrations:

1. Flashing:

   a. Provide flexible flashing and metal counterflashing where piping penetrates weatherproofed or waterproofed walls, floors, and roofs.
   b. Flash floor drains with topping over finished areas with lead, 10 inches (250 mm) clear on sides, with minimum 36-by-36-inch (910-by-910-mm) sheet size.
   c. Fasten flashing to drain clamp device.

2. Sleeves:

   a. Exterior Watertight Entries: Seal with mechanical sleeve seals.
   b. Set sleeves in position in forms and provide reinforcement around sleeves.
   c. Size sleeves large enough to allow for movement due to expansion and contraction and provide for continuous insulation wrapping.
   d. Extend sleeves through floors 1-inch above finished floor level and calk sleeves.
   e. Where piping penetrates floor, ceiling, or wall, close off space between pipe and adjacent Work with stuffing (non-fire rated surfaces) or firestopping (fire rated surfaces) insulation and calk.
   f. Provide close-fitting metal collar or escutcheon covers at both sides of penetration.
   g. Install chrome-plated steel escutcheons at finished surfaces.

D. Firestopping:

1. Fire-Rated Surfaces:

   a. Seal opening at floor, wall, partition, ceiling, and roof.
   b. Install sleeve through opening and extend beyond minimum of 1-inch (25 mm) on both sides of building element.
   c. Size sleeve, allowing minimum of 1-inch (25 mm) void between sleeve and building element.
   d. Pack void with backing material.
   e. Seal ends of sleeve with UL-listed, fire-resistive silicone compound to meet fire rating of structure penetrated.

2. Non-rated Surfaces:

   a. Seal opening.
   b. Install sleeve through opening and extend beyond minimum of 1-inch (25 mm) on both sides of building element.
   c. Size sleeve to allow minimum of 1-inch (25 mm) void between sleeve and building element.

d. Install type of firestopping material recommended by manufacturer.
e. Occupied Spaces:

1) Install escutcheons floor plates or ceiling plates where conduit penetrates non-fire-rated surfaces in occupied spaces.
2) Occupied spaces include rooms with finished ceilings and rooms where penetration occurs below finished ceiling.

f. Exterior Wall Openings below Grade: Assemble rubber links of mechanical sealing device to size of piping and tighten in place according to manufacturer instructions.
g. Interior Partitions:

1) Seal pipe penetrations.
2) Apply sealant to both sides of penetration to completely fill annular space between sleeve and conduit.

E. Flexible Connections: Install flexible couplings at connections to equipment and where indicated on Drawings.

F. Expansion Joints:

1. Install flexible couplings and expansion joints at connections to equipment and where indicated on Drawings.
2. If expansion joint is supplied with internal sleeve, indicate flow direction on outside of joint.

G. Air Release and Vacuum Breakers: Provide vacuum breakers as indicated on Drawings.

H. Backflow Preventers:

1. Install with nameplate and test cock accessible.
2. Install according to local code requirements.
3. Do not install in vertical position.

I. Disinfection: Disinfect potable water piping.

3.4 FIELD QUALITY CONTROL

A. After installation, inspect for proper supports and interferences.

B. Repair damaged coatings with material equal to original coating.

3.5 CLEANING

A. Keep equipment interior clean as installation progresses.

END OF SECTION 400506

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SECTION 400507 - HANGERS AND SUPPORTS FOR PROCESS PIPING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes:

1. Hangers and supports for piping.
2. Delegated Design.

B. Related Requirements:

1. Section 400506 “Couplings, Adapters, and Specials for Process Piping”.
2. Section 400519 “Ductile Iron Process Pipe”.

1.3 DEFINITIONS

A. Ferrous Metal: Iron, steel, stainless steel, and alloys with iron as principal component.

B. Wetted or submerged: Submerged, less than 1-foot above liquid surface, below top of channel or tank wall, under cover or slab of channel or tank, or in other damp locations.

C. “Pipe” or “Piping”: Piping, piping system(s), hose, tube, fittings, joints, valves, and similar appurtenances.

D. Supports: Wherever the word “supports” or “pipe supports” are used, pipe supports, hangers, structural connections, concrete inserts (if allowed), anchors, guides, bolts, expansion units, restraints and all restraint, hanging, supporting, allowing controlled expansion, or other means of attaching piping along with the necessary appurtenances.

1.4 COORDINATION

A. Coordinate Work of this Section with piping and equipment connections specified in other Sections and indicated on Drawings.

1.5 ACTION SUBMITTALS

A. Product Data: Submit manufacturer's catalog data including load capacity.

B. Shop Drawings: Submit scaled piping layouts for each system. Indicate flow stream, pipe size(s) material(s), schedule(s), lining(s), critical dimensions between pipes, equipment and building features. Indicate by schedule pipe hanger/support type and locations. Provide detail of each type of hangers, supports, anchors, and guides.

1.6 DELEGATED DESIGN SUBMITTALS

A. Delegated Design Submittal: For hangers and supports for piping.

1. Where the Drawings show support types and/or locations, analyze them for adequacy to support loads and stresses, modify if required, install generally where shown, and integrate with the pipe support system design.
2. Engage services of an independent registered professional engineer licensed in the State of Florida ordinarily engaged in the business of pipe support systems analysis and design, to analyze system piping and service conditions, and to develop detailed support system design, specific to the piping material, pipe joints, valves, and piping appurtenances proposed for use.

    a. Support system engineering groups include the following:

        1) SAC Incorporated https://www.sacincorporated.com/contact-us/
        2) Fenny Engineering http://www.fennyengineering.com/contact/
        3) Piping Solutions and Energy Associates https://www.pseassoc.com/request-for-service/
        4) Newman Associates https://newmanassoc.com/

3. The support system design shall include:

    a. Criteria by piping system.
    b. Summary of Contractor-selected related components including joints, class, valves, appurtenances, etc., and commercial supports and especially including pipe materials.
    c. Dead weight and dynamic analysis, including system thermal effects and pressure thrusts. Computer-based software system equivalent to Bentley Systems AutoPIPE or SST Systems CAEPIPE.

        1) Present each system in an isometric graphic and show the resolved and resultant force and moment systems, as well as all recommended hangers, supports, anchors, restraints, and expansion/flexible joints.

    d. Submit support system design to Engineer for review. The submittal needs to be stamped by professional engineer registered in State of Florida.
    e. All aspects of the analysis and design to comply with the provisions of ANSI B31.1 and the referenced standards.

4. Coordinate support arrangements to eliminate interference with similar systems to be installed under HVAC, Plumbing, and Electrical; to account for structural expansion joints and to maintain access for both personnel and for removal of equipment.

B. Manufacturers' Instructions: Submit special procedures and assembly of components.

C. Qualifications Statement: Submit qualifications for licensed professional.

1.7 INFORMATIONAL SUBMITTALS

A. Welders' Certificate: Submit welders' certification of compliance with AWS D1.1, verifying qualification within previous 12 months.

B. Qualifications Statements:

1. Submit qualifications for manufacturer, fabricator, installer, and licensed professional.
2. Submit manufacturer's approval of installer.

1.8 DELIVERY, STORAGE AND HANDLING

A. All supports and hangers shall be crated, delivered and uncrated so as to protect against any damage.

B. All parts shall be properly protected so that no damage or deterioration shall occur during a prolonged delay from the time of shipment until installation is completed.

C. Finished metal surfaces not galvanized, that are not of stainless steel construction, or that are not coated, shall be grease coated, to prevent rust and corrosion.

1.9 QUALITY ASSURANCE

A. Perform Work according to AWS D1.1 for welding hanger and support attachments to building structure.

1.10 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing Products specified in this Section with minimum three years' documented experience.

B. Fabricator: Company specializing in fabricating products specified in this Section with minimum three years' documented experience.

C. Licensed Professional: Professional engineer experienced in design of specified Work and licensed in State of Florida.

1. Have at least 5 years of experience in the analysis and design of similar systems, including use of commercial and custom pipe supports and in use of commercial pipe stress software programs.

1.11 DELIVERY, STORAGE, AND HANDLING

A. Inspection: Accept materials on-Site in original factory packaging, labeled with manufacturer's identification.

B. Protect products from weather and construction traffic, dirt, water, chemical, and damage by storing in original packaging.

1.12 EXISTING CONDITIONS

A. Field Measurements: Verify field measurements prior to fabrication. Indicate field measurements on Shop Drawings.

PART 2 - PRODUCTS

2.1 GENERAL

A. Support pipe and appurtenances connected to equipment to prevent any strain being imposed on equipment. Comply with manufacturer’s requirements regarding piping loads being or not being transmitted to their equipment. Submit certification stating that such requirements have been met.

B. Support and secure all pipe and tubing in intended position and alignment to prevent significant stresses in pipe or tubing material, valves, fittings, and other pipe appurtenances. Design all supports to adequately secure the pipe against excessive dislocation due to thermal expansion and contraction, internal flow forces, and all probable external forces such as equipment, pipe, and personnel contact. Any structural steel members required to brace any piping from excessive dislocation shall conform to the applicable requirements of Section 055000 “Metal Fabrications” and shall be furnished and installed under this Section.

C. Contractor may propose minor adjustments to the piping arrangements in order to simplify the supports, or in order to resolve minor conflicts in the work. Such adjustment might involve minor change to a pipe centerline elevation so that a single trapeze support may be used.

D. Where flexible sleeve, split ring, vibration, or other couplings are required at equipment, tanks, etc., the end opposite to the piece of equipment, tank, etc., shall be rigidly supported to prevent transfer of force systems to the equipment. Do not install fixed or restraining supports between a flexible coupling and piece of equipment.

E. Pipe Supports:

1. Shall not induce point loadings but shall distribute pipe loads evenly along the pipe circumference.
2. Provide supports at changes in direction and elsewhere as shown on Drawings or as specified herein.
3. No piping shall be supported from other piping or from metal stairs, ladders, and walkways, unless specifically directed or authorized by Engineer.

4. Provide pipe supports to minimize lateral forces through valves, both sides of flexible split ring type couplings and sleeve type couplings, and to minimize all pipe forces on pump housings. Pump housings shall not be utilized to support connecting pipes.
5. Effects of thermal expansion and contraction of the pipe to be accounted for in the pipe support selection and installation.

F. Insofar as is possible, floor supports shall be given preference. Where specifically indicated, concrete supports, as shown on Drawings, may be used. Base elbow and base tees shall be supported on concrete pedestals.

G. Restraints, flexible connections, expansion items, and related items as included in other specifications (especially Section 400506 “Couplings, Adapters, and Specials for Process Piping” and other individual pipe sections) and shown on the Drawings.

2.2 PERFORMANCE REQUIREMENTS/DESIGN CRITERIA

A. Delegated Design: Engage a qualified professional engineer, as defined in Section 014000 "Quality Requirements," to design hangers and supports for piping.

B. All supports and appurtenances shall be standard products from approved manufacturers wherever possible and shall be adequate to maintain the supported load in proper position under all operating conditions. Any reference to a specific figure number of a specific manufacturer is for the purpose of establishing a type and quality of product and shall not be considered as proprietary. Note that different materials required, as specified in Part 2 MATERIALS, may require different figures or model numbers than those shown.

1. The minimum working factor of safety for all items, with the exception of springs, shall be five times the ultimate tensile strength of the material, assuming 10 feet (3 m) of water-filled pipe being supported and normal test pressures.
2. Design for all loads using a safety factor of 5.

C. Piping schedule is included in the contract drawings.

D. All items shall be designed with strength and stiffness to support, restrain, and allow expansion of the respective pipes under the maximum combination of peak loading conditions to include pipe weight, liquid weight, liquid movement and pressure forces, thermal expansion and contraction, vibrations, and all probable externally applied forces.

E. Support spacing shall be per ASME B31.3.

F. Complete design details of the pipe system components shall be submitted for review and approval as specified in Part 1. No support shall be installed without approved support system Drawings.

G. The pipe support system shall not impose loads on the supporting structures in excess of the loads for which the supporting structure is designed.

H. Pipe will be supported by concrete foundation with bottom of footing minimum 1.5 feet below grade.

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2.3 MATERIALS

A. Metallic Pipe Support:

1. Submerged, buried, or within outdoor structures (vaults, etc.): Type 316 stainless steel (SS).
2. Within chemical areas: Vinyl ester fiberglass reinforced plastic (FRP) for pipe size up to 2-inch (51 mm), epoxy coated steel for 2-1/2 inches (64 mm) size and larger.
3. Other locations: steel with galvanizing where noted, or if not otherwise noted, coating as required.

B. Non-Metallic Pipe Support:

1. Submerged, buried, or within vaults: Type 316 stainless steel or FRP.
2. Within chemical areas: vinyl ester FRP.
3. Other locations: steel with galvanizing where noted, or if not otherwise noted, coating as required; all with local stress protection shields.

C. Wherever stainless steel is noted, it shall be Type 316 unless noted otherwise.

2.4 SUPPORT AND RESTRAINT SYSTEMS

A. Steel or Ductile Iron Piping:

1. Cast iron and ductile iron, steel, and stainless steel piping shall be supported at a maximum support spacing of 10 feet (3 m) with a minimum of one support per pipe section at the joints.
2. Support spacing for ductile iron, steel, and stainless steel piping 2-inch and smaller diameter shall not exceed 5 feet (1.5 m).

B. Copper Piping:

1. Supports for copper pipe shall be copper plated or shall have a 1/16-inch (1.6 mm) plastic coating.
2. Support spacing for copper piping and tubing 2-inch (51 mm) and smaller diameter shall not exceed 5 feet (1.5 m) and greater than 2-inch (51 mm) diameter shall not exceed 8 feet (2.4 m).
3. Where pipe supports come in contact with copper piping, provide protection from galvanic corrosion by: wrapping pipe with 1/16-inch (1.6 mm) thick neoprene sheet material and galvanized protection shield; isolators similar to Cooper B-Line B3195CT; or copper-plated or PVC-coated hangers and supports.

C. Non-Metallic Piping:

1. All uninsulated non-metallic piping such as PVC, CPVC, HDPE, PVDF, etc., shall be protected from local stress concentrations at each support point. Protection shall be provided by non-metallic protection shields or other method as approved by Engineer.

a. Where pipes are bottom supported 180 degrees, arc shields shall be furnished. Where 360-degree arc support is required, such as U-bolts, protection shields shall be provided for the entire pipe circumference. All U-bolts or clamps for non-metallic pipes shall be plastic coated.
b. Protection shields shall have an 18-gauge minimum thickness, not be less than 12 inches (305 mm) in length and be securely fastened to pipe with Type 316 stainless steel straps not less than 1/2-inch (13 mm) wide.

2. Individually supported PVC pipes shall be supported as recommended by the pipe manufacturer except that support-spacing shall be manufacturers recommendation minus 2-feet down to 5 feet spacing recommendation, then spacing shall be 3 feet.
3. Supports for horizontal multiple PVC plastic piping:

a. Shall be continuous wherever possible.
b. Multiple, suspended, horizontal plastic PVC pipe runs, where possible, shall be supported by ladder type cable trays such as: Husky Ladder Flange Out by MPHusky; or equal.
c. Rung spacing shall be 12 inches (305 mm). Tray width shall be approximately 6-inch (152 mm) for single runs and 12 inches (305 mm) for double runs.
d. Ladder type cable trays shall be furnished complete with all hanger rods, rod couplings, concrete inserts, hanger clips, etc., required for a complete support system. Individual plastic pipes shall be secured to the rungs of the cable tray by strap clamps or fasteners similar to: Globe, Series 600; Unistrut Pipe/Conduit Clamps and Hangers; or equal.
e. Spacing between clamps shall not exceed 9 feet (2.7 m). The cable trays shall provide continuous support along the length of the pipe. Individual clamps, hangers, and supports in contact with plastic PVC pipe shall provide firm support but not so firm as to prevent longitudinal movement due to thermal expansion and contraction.

D. Framing Support System:

1. See Part 2 MATERIALS for materials of construction.
2. Beams: Size such that beam stress does not exceed 25,000 psi (172 MPa) and maximum deflection does not exceed 1/240 of span.
3. Column Members: Size in accordance with manufacturer's recommended method.
4. Support Loads: Calculate using weight of pipes filled with water.
5. Maximum Spans:

a. Steel and ductile iron pipe 3-inch (75 mm) diameter and larger: 10 feet (3 m) centers, unless otherwise shown.
b. Other pipelines and special situations: Same as noted in previous paragraphs. Supplementary hangers and supports may be required.

E. All vertical pipes shall be supported at each floor or at intervals of not more than 12 feet (6.4 m) by approved pipe collars, clamps, brackets, or wall rests and at all points necessary to ensure rigid construction. All vertical pipes passing through pipe sleeves shall be secured using a pipe collar.

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2.5 ANCHOR BOLTS/SYSTEMS

A. Anchoring Devices: Design, size, and space support anchoring devices, including anchor bolts, inserts, and other devices used to anchor support, to withstand shear, and pullout loads imposed by loading and spacing on each particular support. DO NOTE USE ADHESIVE ANCHOR BOLTS ON ANY PIPE SUPPORT HUNG FROM A ROOF OR CEILING, unless specifically noted otherwise.

B. All post-installed anchors in concrete shall have current published ICC-ES Evaluation Report indicating the anchor is approved for installation in cracked concrete.

C. The latest edition of the following specification and recommended practices shall become part of this specification as if written herein. Wherever requirements conflict, the more stringent shall govern.

1. ACI 318, Appendix D.
2. ACI 355.2, Mechanical Anchors “Qualification of Post-Installed Mechanical Anchors in Concrete”.
3. Anchor manufacturer’s published installation requirements.

D. Expansion Anchors:

1. The length of expansion bolts shall be sufficient to place the wedge portion of the bolt a minimum of 1-inch (25 mm) behind the steel reinforcement.
2. Manufacturers:

a. Power-Stud+ SD4 and Power-Stud+ SD6 by Powers Fasteners, Brewster, NY.
b. Kwik Bolt as manufactured by Hilti USA, Tulsa, Oklahoma.
c. Wej-it by Wej-it Expansion Products, Inc., Broomfield, Colorado.

E. Unless otherwise noted: use Type 304 stainless steel anchoring parts/bolts and hardware for non-submerged supports, Type 316 stainless steel for submerged anchors.

F. Size of anchor bolts as designed by manufacturer, 1/2-inch (13 mm) minimum diameter, or as shown on the Drawings.

G. Anchors to concrete in chemical areas shall be epoxy secured vinyl ester FRP all thread, insertion depth and size as required by the manufacturer for the design loads. Nuts, bolts and hardware shall all be vinyl ester FRP construction.

2.6 HANGER RODS

A. Where use of steel is allowed, hanger rods shall be hot-rolled steel, machine-threaded, and, except for stainless steel, galvanized after fabrication. The strength of the rod shall be based on its root diameter.

1. Hanger rods shall be attached to concrete structures using single or continuous concrete inserts by the named support manufacturers above. Where use of steel is allowed, inserts shall be malleable iron or steel with galvanized finish.
2. Beam-clamps, C-clamps, or welded-beam attachments shall be used for attaching hanger rods to structural steel members.

B. Minimum rod size for metallic rod hangers: (* For pipe diameters less than 14-inch (356 mm), if using pipe roller, use 2 hanger rods with minimum diameter noted below for pipe's diameter).

	Nominal Pipe / Tube Diameter	Minimum Hanger Rod Diameter
1	Less than 2-1/2-inches (64 mm)	1/4-inch (6.4 mm) *
2	3 to 8 inches (75 to 203 mm)	1/2-inch (13 mm) *
3	10 to 14 inches (254 to 356 mm)	3/4-inch (19 mm) *
4	16 to 20 inches (406 to 508 mm)	2 at 1-inch (25 mm)
5	24 inches (610 mm)	2 at 1-1/4-inches (32 mm)
6	30 inches (762 mm)	2 at 1-1/2-inches (38 mm)

2.7 SINGLE PIPE HANGERS

A. Unless otherwise indicated, pipe hangers and supports shall be standard catalogued components, conforming to the requirements of MSS-41, 58, or 69 and shall be of the following type:

1. Anvil International.
2. Equal models by: Carpenter & Patterson, Inc., Wobum, MA.
3. Cooper B-Line.
4. Gulf State Manufacturing.
5. Unistrut Northeast, Cambridge, Massachusetts.
6. CADDY; nVent.
7. Carpenter & Paterson, Inc.
8. Empire Industries, Inc.
9. Globe Pipe Hanger Products Incorporated.
10. Haydon Corporation.
11. Hilti, Inc.
12. NIBCO INC.
13. PHD Manufacturing, Inc.
14. PHS Industries, Inc.
15. Unitron Product, Inc. / US-Strut.

B. Single pipes shall be supported by hangers suspended by hanger rods from structural steel members, concrete ceilings, bottom of trapeze hangers, and wall-mounted steel angle brackets.

C. Where pipes are near walls, beams, columns, etc., and located an excessive distance from ceilings or underside of beams, welded steel wall brackets similar to Carpenter and Patterson, Figure Nos. 68, 79, 84, or 139 shall be used for hanging pipe. Where single pipes rest on top of bracket pipe supports, attachments shall meet requirements as specified under multiple pipe hangers.

2.8 MULTIPLE PIPE HANGERS

A. Suspended multiple pipes, running parallel in the same horizontal plane that are adjacent to each other, shall be suspended by trapeze type hangers or wall brackets. Where use of steel is allowed, trapeze hangers shall consist of galvanized structural steel channel supported from galvanized threaded rod or attached to concrete walls, columns, or structural steel support members. See previous paragraphs about multiple PVC pipe supports.

B. Except as otherwise specified herein, pipe anchors used for attaching pipe to trapeze or multiple pipe wall brackets shall be anchor or pipe chairs similar to:

1. Anvil Fig. 175.
2. Cooper B-Line B3147A or B3147B.
3. Where use of steel is allowed, material of construction shall be galvanized steel. Chair U bolts shall be tightened to allow freedom of movement for normal expansion and contraction except where pipe must be anchored to control direction of movement or act as a thrust anchor.

2.9 SINGLE PIPE SUPPORTS FROM BELOW

A. Single pipes located in a horizontal plane close to the floor shall be Pedestal type: Schedule 40 pipe stanchion, saddle, and anchoring flange.

1. Nonadjustable Saddle: MSS SP 58, Type 37 with U-Bolt.

    a. Anvil, Figure 259.
    b. Cooper B-Line, Figure B3090.

2. Adjustable Saddle: MSS SP 58, Type 38 without clamp.

    a. Anvil, Figure 264.
    b. Cooper B-Line, Figure B3093.

B. Pipes less than 3-inch (75 mm) in diameter:

1. Hold in position by supports fabricated from steel C channel, welded post base similar to Unistrut, Figure P2072A, where use of steel is allowed; and pipe clamps similar to Unistrut, Figures P1109 through 26.
2. Where required to assure adequate support, fabricate supports using two vertical members and post bases connected by horizontal member of sufficient load capacity to support pipe.
3. Fasten supports to nearby walls or other structural member to provide horizontal rigidity.

4. More than one pipe may be supported from a common fabricated support.

C. Pipes 3-inch (75 mm) in diameter and larger:

1. Support by adjustable stanchions.
2. Provide at least 4-inch (102 mm) adjustment.
3. Flange mount to floor.

D. Use yoked saddles for piping whose centerline elevation is 18-inch (458 mm) or greater above the floor and for all exterior installations.

E. Pipe roller type supports shall be used where required to accommodate thermal movement in conjunction with axial supports.

2.10 WALL SUPPORTED SINGLE AND MULTIPLE PIPES

A. Single or multiple pipes located adjacent to walls, columns, or other structural members shall be supported using welded steel wall brackets, where use of steel is allowed, as manufactured by Carpenter and Patterson, Figure No. 69, 84, or 139.

B. Where noted, multiple pipes may be supported on C-channel with steel brackets similar to Unistrut pipe clamps; with pipe anchor chairs; or equal.

C. Individual pipes, up to 8-inch diameter, where noted, may use MSS Type 8 pipe clamps as noted on Drawings.

D. Securely fasten all members to wall, column, etc., using double-expansion shields or other method as approved by the Engineer. Provide additional wall bearing plates as required.

2.11 BASE ANCHOR SUPPORT

A. Bend Support: Where pipes change direction from horizontal to vertical via a bend, install a welded or cast base bend support to carry the load. Fasten to the floor, pipe stanchion, or concrete pedestal using expansion anchors or other method as approved by the Engineer.

B. Concrete Supports: Where indicated, securely fasten pipe bends to concrete supports with suitable metal bands as required and approved by the Engineer. Isolate piping from poured concrete with a neoprene insert.

2.12 VERTICAL PIPE SUPPORTS

A. Where vertical pipes are not supported by a Unistrut type system as specified, they shall be supported in one of the following methods.

1. For pipes 1/4 to 2-inch (6.4 to 51 mm) in diameter:

a. Provide extension hanger ring with an extension rod and hanger flange.
b. The rod diameter shall be as recommended by the manufacturer for the type of pipe to be supported.

c. Where use of steel is allowed, the hanger ring shall be steel- or PVC-clad depending on the supported pipe material of construction. The hanger ring shall be equal to Carpenter & Patterson, Figure Nos. 81.
d. Where use of steel is allowed, the anchor flange shall be galvanized malleable iron similar to Carpenter and Patterson, Figure No. 85.

2. For pipes equal to or greater than 2-inch (51 mm) in diameter:

a. Extended pipe clamps similar to Carpenter & Patterson, Figure No. 267 may be used.
b. Attach hanger to concrete structures using double expansion shields.
c. Attach hanger to metal support members using welding lugs similar to Carpenter & Patterson, Figure No. 114.

B. Pipe supports shall be provided for closely spaced vertical piping systems required to provide a rigid installation. The interval of vertical support spacing shall be as specified, but in no case shall vertical interval exceed 12 feet (3.66 m). The support system shall consist of a framework suitably anchored to floors, ceilings, or roofs.

C. Unless otherwise specified, shown, or specifically approved by the Engineer, vertical runs exceeding 12 feet (3.7 m) shall be supported by base elbows/tees, clamps, brackets, wall rests, and pipe collars, all located as required to ensure a rigid installation.

D. Pipe riser clamps, per MSS SP58, shall be used to support all vertical pipes extending through floor slabs. Where use of steel is allowed, riser clamps shall be galvanized steel manufactured by:

1. Carpenter & Patterson, Figure No. 128.
2. Anvil, Figure 261.
3. Cooper B-Line, Figure B3373.
4. Or equal.

E. Copper-clad or PVC-coated clamps shall be used on copper pipes. Insulation shall be removed from insulated pipes prior to installing riser clamps. Insulation shall not be damaged by clamp installation.

2.13 SPECIAL SUPPORTS

A. Framework Supports:

1. Vertical and horizontal supporting members shall be U-shaped channels similar to Unistrut, Series P1000. Vertical piping shall be secured to the horizontal members by pipe clamps or pipe straps. See pipe clamp and strap requirements.
2. For piping 3-inch (75 mm) and smaller, framework shall be as manufactured by:

a. Unistrut Corporation.
b. Power-Strut (or Ackinstrut where fiberglass systems are specified).
c. Multi-Strut by Carpenter-Paterson.
d. Or equal.

3. For piping larger than 3-inch (75 mm), the support frame shall be fabricated from structural stainless steel or steel shapes, depending upon the support location, and secured through the use of drop in, adhesive or expansion anchors.
4. The assemblies shall be furnished complete with all nuts, bolts, and fittings required for a complete assembly including end caps for all Unistrut members.
5. Electrical Conduit Support: Under Division 26.
6. The design of each individual framing system shall be the responsibility of the Contractor. Submit shop drawings, and show all details of the installation, including dimensions and types of supports. In all instances the completed frame shall be adequately braced to provide a complete rigid structure when all the piping has been attached. See also Article SUPPORT AND RESTRAINT.

B. Supports not otherwise described in this Section shall be fabricated or constructed from standard structural stainless steel or steel shapes in accordance with applicable provisions of Section 055000 “Metal Fabrications,” or Unistrut-type frame; have anchor hardware similar to items previously specified herein; shall meet the minimum requirements listed below; and be subject to the approval of the Engineer.

C. Additional Pipe Support Situations:

1. Supporting Multiple Chemical and Related Piping:

a. Location: indicated on Drawings or otherwise required, especially adjacent to chemical pumps.
b. Use: framework support.
c. Materials: FRP, with proper local stress protection.

2.14 SHOP FACTORY FINISHING

A. Prepare and prime metallic (except stainless steel) supports.

2.15 ACCESSORIES

A. Insulation Shield: Install on insulated non-steel piping. Oversize the rollers and supports, as required. Manufacturers:

1. Anvil, Figure 167.
2. Cooper B-Line, Series B3151.

B. Welding Insulation Saddle: Install on insulated metal pipe. Oversize the rollers and supports, as required. Manufacturers:

1. Anvil, Figure 160.
2. Cooper B-Line, Series B3160.

C. Vibration Isolation Pad: Install under base flange of pedestal type pipe supports adjacent to equipment, and where required to isolate vibration.

1. Isolation pads to be neoprene, waffle type.
2. Manufacturers:

    a. Mason Industries, Type W.
    b. Korfund.

D. Dielectric Barrier:

1. Install between carbon steel members and copper or stainless steel pipe.
2. Install between stainless steel supports and non-stainless steel ferrous metal piping.
3. All stainless steel piping shall be isolated from all ferrous materials, including galvanized steel by use of neoprene sheet material and protection shields.

E. Electrical Isolation: Install 1/4 by 3-inch (6.4 by 75 mm) neoprene rubber wrap between submerged metal pipe and oversized clamps.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify field dimensions as indicated on Shop Drawings.

3.2 INSTALLATION

A. Inserts:

1. Install inserts for placement in concrete forms. Before setting inserts, all drawings and figures shall be checked that have a direct bearing on the pipe location. Responsibility for the proper location of pipe supports is included under this Section.
2. Install inserts for suspending hangers from reinforced concrete slabs and sides of reinforced concrete beams.
3. Provide hooked rod to concrete reinforcement section for inserts carrying pipe 4 in (100 mm) and larger.
4. Where concrete slabs form finished ceiling, locate inserts flush with slab surface.
5. Where inserts are omitted, drill through concrete slab from below and provide through-bolt with recessed square steel plate and nut above slab.

B. Pipe Hangers and Supports:

1. Install according to: ASME B31.3.
2. Support horizontal piping as indicated on Shop Drawings, depending upon pipe size.
3. Install hangers with minimum 1/2 inch (13 mm) space between finished covering and adjacent Work.
4. Place hangers within 12 inches (300 mm) of each horizontal elbow.
5. Use hangers with 1-1/2-inches (38 mm) minimum vertical adjustment.
6. Support horizontal cast iron pipe adjacent to each hub, with 5 feet (1.5 m) maximum spacing between hangers.

7. Support vertical piping at every other floor. Support vertical cast iron pipe at each floor at hub.
8. Where piping is installed in parallel and at same elevation, provide multiple pipe or trapeze hangers.
9. Support riser piping independently of connected horizontal piping.
10. Provide copper-plated hangers and supports for copper piping.
11. Design hangers for pipe movement without disengagement of supported pipe.
12. Support piping independently so that equipment is not stressed by piping weight or expansion in piping system.
13. Support large or heavy valves, fittings, and appurtenances independently of connected piping.
14. Provide welded steel brackets where piping is to be run adjacent to building walls or columns.
15. Use beam clamps where piping is to be suspended from building steel.
16. Insulated Piping: Provide two bolted clamps designed to accommodate insulated piping.
17. Use offset clamps where pipes are indicated as offset from wall surfaces.
18. Proceed with installation of piping and supports only after any building structural work has been completed and new concrete has reached its 28-day compressive strength.
19. The installation of pipe support systems shall not interfere with the operation of any overhead bridge cranes, monorails, access hatches, etc. No piping shall be supported from stairs, other pipes, ladders, and walkways unless authorized by the Engineer.
20. Repair mounting surfaces to original condition after attachments are made.
21. Brace horizontal pipe movements by both longitudinal and lateral sway bracing.
22. Where supports are required in areas to receive chemical resistant seamless flooring, install supports prior to application of flooring system.

C. Insulation:

1. Provide clearance in hangers and from structure and other equipment for installation of insulation.

D. Equipment Bases and Supports:

1. Provide housekeeping pads as detailed on Drawings.
2. Using templates furnished with equipment, install anchor bolts and accessories for mounting and anchoring equipment.
3. Construct supports of steel members. Brace and fasten with flanges bolted to structure.
4. Provide rigid anchors for pipes after vibration isolation components are installed.

E. Prime Coat:

1. Prime coat exposed steel hangers and supports.
2. Hangers and supports located in crawl spaces, pipe shafts, and suspended ceiling spaces are not considered exposed.

3.3 FIELD QUALITY CONTROL

A. All pipe support systems shall be tested after installation in conjunction with the respective piping pressure tests. If any part of the pipe support system proves to be defective or inadequate, it shall be repaired, augmented or replaced to the satisfaction of the Engineer.

B. After the work is installed, but before it is filled for start-up and testing, the Support System Design Engineer shall inspect the work and shall certify its complete adequacy. Each system shall be inspected and certified in the same way.

C. Submit a report, including all field modifications and including all certificates.

1. Insert state where project is located.
2. Report shall bear the stamp of a professional engineer registered in State of Florida and shall be subject to review of Engineer.

END OF SECTION 400507

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SECTION 400519 - DUCTILE IRON PROCESS PIPE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Ductile-iron pipe.
2. Ductile-iron, malleable-iron, and cast-iron fittings.
3. Accessories.

B. Related Requirements:

1. Section 400506 “Couplings, Adapters, and Specials for Process Piping” for piping appurtenances.
2. Section 400507 “Hangers and Supports for Process Piping” for hangers, anchors, sleeves, and sealing of piping to adjacent structures.
3. Section 400551 “Common Requirements for Process Valves” for common product requirements for valves for placement by this Section.

1.3 COORDINATION

A. Coordinate Work of this Section with piping and equipment connections specified in other Sections and indicated on Drawings.

1.4 ACTION SUBMITTALS

A. Product Data: Submit manufacturer information regarding pipe and fittings.

B. Shop Drawings:

1. Indicate layout of piping systems, including equipment, critical dimensions, sizes, and materials lists.

1.5 INFORMATIONAL SUBMITTALS

A. Manufacturer's Certificate: Prior to shipment of pipe, submit a certified affidavit of compliance from the pipe manufacturer stating that the pipe fittings, gaskets, linings and exterior coating for

this project have been manufactured and tested in accordance with AWWA and ASTM standards and requirements specified herein.

B. Source Quality-Control Submittals: Indicate results of [**shop**] [**factory**] tests and inspections.

C. Field Quality-Control Submittals: Indicate results of Contractor-furnished tests and inspections.

1.6 CLOSEOUT SUBMITTALS

A. Project Record Documents: Record actual locations of piping, valves and other appurtenances, connections, and [**invert**] [**centerline**] elevations.

B. Identify and describe unexpected variations to subsoil conditions or discovery of uncharted utilities.

1.7 QUALITY ASSURANCE

A. Materials (including linings) in Contact with Potable Water: Certified according to NSF 61 and NSF 372.

B. Hydrostatically test each length of ductile iron pipe at the point of manufacture to 500 psi for a duration of 10 seconds per AWWA C151. Furnish certified test results in duplicate to the Engineer prior to time of shipment.

C. Inspect and test by Manufacturer the ductile-iron pipe and fittings at the foundry as required by the AWWA C600, Hydrostatic Testing. Furnish in duplicate to the Engineer sworn certificates of such tests and their results prior to the shipment of the pipe.

D. Pipe and fittings to be installed under this Contract may be inspected at the plant for compliance with this Section by an independent testing laboratory selected by the Owner, at the Owner's expense.

E. Engineer will inspect the pipe and fittings after delivery. Products are subject to rejection at any time on account of failure to meet any of the specified requirements, even though accepted as satisfactory at the place of manufacture. Immediately mark pipe rejected after delivery and remove from the job site.

F. Permanently mark pipe and fittings with the following information:

1. Manufacturer name and trademark.
2. Manufacturing date.
3. Size, type, class, or wall thickness.
4. Production Standard (AWWA, ASTM, etc.).

1.8 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing products specified in this Section with minimum five years' documented experience.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Inspection: Accept materials on Site in manufacturer's original packaging and inspect for damage. Photograph and provide written documentation of damaged materials.

B. Store materials according to manufacturer instructions.

C. Protection:

1. Protect materials from moisture and dust by storing in clean, dry location remote from construction operations areas.
2. Coverall openings to prevent entrance of dirt, water, and debris.
3. Protect piping and appurtenances by storing off ground.
4. Limit stacking height to manufacturers specified maximum.
5. Provide additional protection according to manufacturer instructions.

1.10 EXISTING CONDITIONS

A. Field Measurements:

1. Verify field measurements prior to fabrication.
2. Indicate field measurements on Shop Drawings.

PART 2 - PRODUCTS

2.1 DUCTILE IRON PIPE AND FITTINGS

A. Piping:

1. Comply with AWWA C150.
2. Pressure Class: 350.
3. Ductile Iron pipe as manufactured by U.S. Pipe and Foundry Company, Inc.; American Cast Iron Pipe Company; Clow; all divisions of the McWane Company or an approved equal who is a member of the Ductile Iron Pipe Research Association (DIPRA).

B. Fittings:

1. Material: ANSI Standard A-21.10 (AWWA C111).
2. Pressure Rating: Same as that of connected piping.
3. Mechanical Joints:

a. Comply with AWWA C110 and AWWA C111.
b. Glands: Ductile iron with asphaltic coating.
c. Push-on Joints: Comply with AWWA C111.
d. Manufacturers:

1) EBAA Iron Mega-lug Series 1100.

2) Ford UFR-1400U.
3) Sigma One-Lok.
4) Tyler/Union Tufgrip Series 1000.
5) Star Series 3000.

4. Restrained Joints: Comply with AWWA C111.

a. Gaskets:

1) American Fast Grip Gasket.
2) US Pipe Field-Loc Gasket.

5. Flanged Fittings: Comply with AWWA C110.

a. Assembly bolts: square headed carbon steel machine bolts with hexagon nuts per ANSI B18.2. Threads conform to ANSI B1.1. Bolt length: 1/8-inch to 5/8-inch protrusion from nut after torquing. Nuts and Bolts shall be high tensile strength stainless steel for flanged fittings and COR-TEN on mechanical joints with each type marked as such on the nuts and bolts.

C. Interior Lining:

1. Epoxy Lining:

a. Line ductile iron pipe and fittings with ceramic-filled amine-cured epoxy, Protecto 401 by Induron.
b. Lining thickness of 40 mils minimum. Applicator approved by coating manufacturer and applied in accordance with manufacturer's instructions and under controlled conditions at applicator's shop or pipe manufacturer's plant.
c. Submit certified affidavit of compliance with manufacturer's instructions and requirements specified herein.

D. Exterior Coating:

1. If required, coatings "hold-backs" to be provided at pipe and fitting ends for satisfactory installation for joint connections in the field.
2. Provide all necessary coating materials to perform field coating applications at joints compatible with or equal to the shop applied material.
3. Field repair of pipe with damaged coating shall receive prior approval of the Engineer. If, in the opinion of the Engineer coating damage is beyond repair, pipe to be replaced at the expense of the Contractor.
4. All flange bearing surfaces shall be uncoated.
5. Mechanically clean or brush blast all surfaces to have exterior coating applied to ductile iron surfaces. Chemical cleaning or wiping with solvent is not acceptable.

2.2 ACCESSORIES

A. Gaskets:

1. Full face type SBR per AWWA C111 to provide positive sealing for the flanged ductile iron joints.
2. Thickness 1/8-inch.
3. NSF61 certified for potable water applications.

2.3 SOURCE QUALITY CONTROL

A. Provide shop inspection and testing of completed assembly.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that field dimensions are as indicated on Drawings.

B. Inspect existing flanges for nonstandard bolt hole configurations or design and verify that new pipe and flange mate properly.

3.2 PREPARATION

A. Thoroughly clean pipe and fittings before installation.

B. Surface Preparation:

1. Clean surfaces to remove loose rust, mill scale, and other foreign substances by power wire brushing.
2. Touch up shop-primed surfaces with primer.
3. Solvent-clean surfaces that are not shop primed.

3.3 INSTALLATION

A. Exposed Service Piping:

1. According to ASME B31.3.
2. In compliance with manufacturer’s instructions.
3. Run piping straight along alignment as indicated on Drawings, with minimum number of joints.
4. Clean each length prior to installation.
5. Support per Section 400507 “Hangers and Supports for Process Piping”.
6. Do not use equipment flanges for support; support pipe separately.

B. Fittings:

1. According to manufacturer instructions.
2. Clean gasket seats thoroughly, and wipe gaskets clean prior to installation.

3. Tighten bolts progressively, drawing up bolts on opposite sides until bolts are uniformly tight; use torque wrench to tighten bolts to manufacturer instructions.
4. Flanged joints to be made using gaskets, bolts, bolt studs with a nut on each end, or studs with nuts where the flange is tapped. The number and size of bolts to conform to the same ANSI Standard as the flanges.
5. Provide required upstream and downstream clearances from devices as indicated on Drawings.

C. Make taps to ductile iron piping only with service saddle, tapping boss of a fitting or valve body, or equipment casting.

D. Install piping with sufficient slopes for venting or draining liquids and condensate to low points.

E. Support exposed piping as specified in Section 400507 “Hangers and Supports for Process Piping”.

F. Provide expansion joints as specified in Section 400506 “Couplings, Adapters, and Specials for Process Piping”, and pipe guides as specified in Section 400507 “Hangers and Supports for Process Piping”, to compensate for pipe expansion due to temperature differences.

G. Dielectric Fittings: Provide between dissimilar metals.

H. Field Cuts: According to pipe manufacturer instructions. Cutting by abrasive saw only, leaving a smooth cut at right angles to the axis of the pipe. Damage to the lining repaired to the satisfaction of Engineer. Seal Field cut ends approved epoxy coating in accordance with manufacturer's instructions.

I. Finish primed surfaces.

3.4 FIELD QUALITY CONTROL

A. Pressure Testing:

1. Test Pressure: No less than 100 psig (690 kPa).
2. Conduct hydrostatic test for minimum two hours.
3. Filling:

    a. Fill section to be tested with water slowly and expel air from piping at high points.
    b. Install corporation cocks at high points.
    c. Close air vents and corporation cocks after air is expelled.
    d. Raise pressure to specified test pressure.

4. Observe joints, fittings, and valves under test.
5. Remove and renew cracked pipe, joints, fittings, and valves showing visible leakage and retest.
6. Leakage:

    a. Correct visible deficiencies and continue testing at same test pressure for additional two hours to determine leakage rate.
    b. Maintain pressure within plus or minus 5 psi (34.4 kPa) of test pressure.

c. Leakage is defined as quantity of water supplied to piping necessary to maintain test pressure during period of test.
d. Compute maximum allowable leakage by following formula:

1) L = SD x sqrt(P)/C.
2) L = testing allowance in gph (L/h).
3) S = length of pipe tested in feet (m).
4) D = nominal diameter of pipe in inches (mm).
5) P = average test pressure during hydrostatic test in psig (kPa).
6) C = 148,000 (794 797).
7) If pipe under test contains sections of various diameters, calculate allowable leakage from sum of computed leakage for each size.

e. If test of pipe indicates leakage greater than allowed, locate source of leakage, make corrections, and retest until leakage is within allowable limits.
f. Correct visible leaks regardless of quantity of leakage.

3.5 CLEANING

A. Keep pipe interior clean as installation progresses.

B. After installation, clean pipe interior of soil, grit, and other debris.

END OF SECTION 400519

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SECTION 400531 - THERMOPLASTIC PROCESS PIPE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Small diameter PVC pipe.
2. Fittings.
3. Accessories for plastic piping.

B. Related Requirements:

1. Section 400506 “Couplings, Adapters, and Specials for Process Piping” for pipe penetrations, restrained joints, flexible connections, expansion joints and loops, and sleeve-type couplings.
2. Section 400507 “Hangers and Supports for Process Piping” for hangers, anchors, sleeves, and sealing of piping to adjacent structures.
3. Section 400551 “Common Requirements for Process Valves” for common product requirements for valves for placement by this Section.

1.3 COORDINATION

A. Coordinate Work of this Section with piping and equipment connections specified in other Sections and indicated on Drawings.

1.4 ACTION SUBMITTALS

A. Product Data: Submit manufacturer's catalog information regarding pipe and fittings.

B. Shop Drawings: Indicate layout of piping systems, including equipment, critical dimensions, sizes, materials lists, location of all fittings, valves, and in-line accessories.

C. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

D. Manufacturer’s recommended butt fusion welding procedures identifying all quality control checks during the fusion procedure including the minimum and maximum allowable bead formation during the heat soak process and the final weld roll back process for the various size pipes.

E. Manufacturer to provide sample joint for each size pipe to be supplied that is 12-inches long and has two heat fusion welds that identifies the manufacturer's minimum and maximum allowable bead thicknesses. Provide documentation that the sample was pressure tested to 150 psi or specified pressure.

1.5 INFORMATIONAL SUBMITTALS

A. Source Quality-Control Submittals: Indicate results of shop tests and inspections.

B. Field Quality-Control Submittals: Indicate results of Contractor-furnished tests and inspections.

C. Qualifications Statements:

1. Submit qualifications for manufacturer, installer, and licensed professional.
2. Submit manufacturer's approval of installer.

1.6 CLOSEOUT SUBMITTALS

A. Project Record Documents: Record actual locations of piping, valves and other appurtenances, connections, and centerline elevations.

B. Identify and describe unexpected variations to subsoil conditions or discovery of uncharted utilities.

1.7 QUALITY ASSURANCE

A. Permanently mark each length of pipe with manufacturer's name or trademark and indicate conformance to standards.

B. Materials in Contact with Potable Water: Certified according to NSF 61.

1.8 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing products specified in this Section with minimum three years' documented experience.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Inspection:

1. Accept materials on Site in manufacturer's original packaging and inspect for damage.
2. Manufacturer's Packaging: Comply with ASTM D3892.

B. Storage: Store materials according to manufacturer instructions.

C. Protection:

1. Protect materials from puncture, abrasion, moisture, dust, and UV by storing in clean, dry location remote from construction operations areas.
2. Protect piping and appurtenances by storing off ground.
3. Provide additional protection according to manufacturer instructions.

1.10 AMBIENT CONDITIONS

A. Minimum and Maximum Temperatures: Do not install pipe when temperature is below 40 degrees F (4.4 degrees C) or above 90 degrees F (32.2 degrees C) if pipe is exposed to direct sunlight.

B. UV Protection: Provide pipe installed above ground or outside with UV protection.

1.11 EXISTING CONDITIONS

A. Field Measurements:

1. Verify field measurements prior to fabrication.
2. Indicate field measurements on Shop Drawings.

PART 2 - PRODUCTS

2.1 PVC PIPE, TUBE, AND FITTINGS

A. PVC piping shall be provided by:

1. Asahi / America.
2. George Fisher.
3. Or equal.

B. PVC Pipe and Fittings:

1. Pipe and Fittings:

a. Comply with ASTM D1785, Class 12454.
b. Schedule: 80.
c. Fittings: ASTM D2467, Schedule 80, socket.

2. Fittings: ASTM D2466, Schedule 40, socket or D2467, Schedule 80, socket.
3. Joints: ASTM D2855, socket, solvent welded.
4. Flanges: Comply with ASME B16.5, rated for maximum 150 psig working pressure.

a. Van Stone flanges shall not be used with pinch valves, industrial butterfly valves; elastomer bellows style expansion joints or other piping system components having an elastomer liner (rubber seat) that is used as a gasket.

2.2 FINISHES

A. Coat machined faces of metallic flanges with temporary rust-inhibitive coating.

2.3 ACCESSORIES

A. PVC Piping:

1. Flange Bolting:

a. Hex-Head Bolts: Stainless steel; ASTM F593 Grade 316.
b. Hex-Head Nuts: Stainless steel; ASTM F594 Grade 316.

2. Flange Gaskets:

a. Type: Full faced.
b. Material: EPDM.
c. Comply with ASME B16.21.

3. Solvent Cement:

a. Comply with ASTM D2564.
b. Formulated for use with sodium hypochlorite and other caustic solutions.
c. Primers: Comply with ASTM F656.

2.4 SOURCE QUALITY CONTROL

A. Provide shop inspection and testing of completed pipe sections.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that field dimensions are as indicated on Drawings.

B. Inspect existing flanges for nonstandard bolt hole configurations or design and verify that new pipe and flange mate properly.

3.2 PREPARATION

A. Ream pipe ends, remove burrs, and bevel plain-end pipe.

B. Thoroughly clean pipe and fittings before installation.

C. Cleaning: Clean surfaces to remove foreign substances.

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3.3 INSTALLATION

A. Comply with ASME B31.3 and B31.9.

B. Run piping straight along alignment as indicated on Drawings, with minimum number of joints.

C. Fittings:

1. According to manufacturer instructions.
2. Gaskets:

    a. Clean seats thoroughly.
    b. Wipe gaskets clean prior to installation.

3. Tighten bolts progressively, drawing up bolts on opposite sides until bolts are uniformly tight; use torque wrench to tighten bolts to manufacturer instructions.

D. Provide required upstream and downstream clearances from devices as indicated.

E. Install piping with sufficient slopes for venting or drainage of liquids and condensate to low points.

F. Support exposed piping as specified in Section 400507 “Hangers and Supports for Process Piping”.

G. Provide expansion joints as specified in Section 400506 “Couplings, Adapters, and Specials for Process Piping”, and provide pipe guides as specified in Section 400507 “Hangers and Supports for Process Piping”, to compensate for pipe expansion due to temperature differences.

H. Field Cuts: According to pipe manufacturer instructions.

I. Joining:

1. Primers and Cleaners: Comply with ASTM F402.
2. PVC Solvent-Cemented Joints: Comply with ASTM D2855.

3.4 FIELD QUALITY CONTROL

A. Inspection:

1. Inspect for piping defects that may be detrimental as determined by Engineer.
2. Repair damaged piping, or provide new, undamaged pipe.
3. After installation, inspect for proper supports and interferences.

B. Pressure Testing:

1. Test Pressure: Not less than 150 psig (1034 kPa) or 1.5 times the system’s working pressure, whichever is greater.
2. Conduct hydrostatic test for minimum two hours.

3. Filling:

    a. Fill section to be tested with water slowly and expel air from piping at high points.
    b. Install corporation cocks at high points.
    c. Close air vents and corporation cocks after air is expelled.
    d. Raise pressure to specified test pressure.

4. Observe joints, fittings, and valves under test.
5. Remove and renew cracked pipe, joints, fittings, and valves showing visible leakage and retest.
6. Leakage:

    a. Correct visible deficiencies and continue testing at same test pressure for additional two hours to determine leakage rate.
    b. Maintain pressure within plus or minus 5 psi (34.4 kPa) of test pressure.
    c. Leakage is defined as quantity of water supplied to piping necessary to maintain test pressure during period of test.
    d. Correct visible leaks and repeat test to verify no leaks at the required test pressures.

3.5 CLEANING

A. Keep pipe interior clean as installation progresses.

B. Clean pipe interior of soil, grit, shavings, and other debris after pipe installation.

END OF SECTION 400531

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SECTION 400551 - COMMON REQUIREMENTS FOR PROCESS VALVES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Common requirements for valves.
2. Common requirements for valve actuators.
3. Valve tags.
4. Valve Schedule.
5. Delegated Design.

B. Related Requirements:

1. Section 033010 “Miscellaneous Cast-in-Place Concrete” for execution requirements for placement of concrete as required by this Section.
2. Section 055000 “Metal Fabrications” for miscellaneous metalwork and fasteners specified by this Section.
3. Section 099676.13 “Wastewater Collection System Coatings”.
4. Section 400507 “Hangers and Supports for Process Piping” for product and execution requirements for valve supports specified by this Section.
5. Section 400557 “Actuators for Process Valves and Gates.”

1.3 COORDINATION

A. Coordinate Work of this Section with individual process valve specifications.

1.4 ACTION SUBMITTALS

A. Valve Tags:

1. Materials, dimensions and thickness of tags, materials and gauge of cable and splicing hardware.
2. Color palate for Owner selection.
3. Full scale drawing of sample with lettering dimensions and scribe depth.
4. Valve tag lettering provided with Valve tag identified in the Process and Instrumentation Diagram Drawings.

B. Power Actuator Data:

1. Sizing calculations:

    a. Provide fluid pressure and velocity sizing basis.
    b. Provide maximum valve torque based on disc shape and flow direction.
    c. Clearly indicate safety factors and mechanical ratios of any intermediate gearing.

2. Maximum output torque of actuator and intermediate gearing.
3. Details of actuator mounting, including orientation of actuator and intermediate gearing.
4. Dimensional drawing of actuator assembled on valve.
5. Pneumatic/Hydraulic pressure requirements, electrical power supply, plumbing connection sizes and locations.
6. Wiring diagram, control wiring and protocol.
7. Valve cavitation limits for positioning, modulating and control valves mated to power actuator.

C. Shop Drawings: Valve and actuator model number and size, valve parts list, materials of each part including material standard designation (ASTM or other), position indicators, limit switches, actuator mounting.

D. Provide certified hydrostatic test data, per manufacturer's standard procedure or MSS-SP-61 for all valves.

1.5 DELEGATED DESIGN SUBMITTALS

A. Submit signed and sealed Shop Drawings with design calculations and assumptions for sizing of control valves.

1.6 INFORMATIONAL SUBMITTALS

A. Manufacturer Instructions: Submit installation and operation instructions for each component including valve, actuator, gearbox, and any included instrumentation.

B. Source Quality-Control Submittals: Indicate results of integrators facility tests and manufacturers factory tests and inspections.

C. Field Quality-Control Submittals: Indicate results of Contractor-furnished tests and inspections.

D. Manufacturer Certification of Installation: Certify that equipment has been installed according to manufacturer instructions.

E. Qualifications Statement:

1. Submit qualifications for manufacturer and licensed professional.

1.7 QUALITY ASSURANCE

A. Maintain clearances as indicated on Drawings.

B. Ensure that materials of construction of wetted parts are compatible with process liquid.

C. Mate valves to actuators at manufacturer's or integrator's facility. Fully test assembled product and certify ready for installation prior to shipment to the job site.

1. Only in special cases for extremely large assemblies where installation requires disassembly, may actuators be mounted to the valves in the field.

D. Materials in Contact with Potable Water: Certified to NSF 61 and NSF 372.

E. Furnish affidavit of compliance with testing and manufacturing standards referred in this specification and the individual valve specifications.

F. Provide the services of qualified and factory-trained service representative of the manufacturer to provide installation inspection and check out, and operational and maintenance instruction, for each type of the following equipment for the following durations:

Equipment	Valve Sizes	Installation Inspection	O and M Instruction
480 volt electric actuators	N/A	1 day	1 day

G. Obtain Manufacturer's Certification of Proper Installation for Specified valves and valve assemblies.

1.8 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing valves and actuators with minimum ten years' documented experience.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Inspection: Accept materials on Site in manufacturer's original packaging and inspect for damage.

B. Deliver factory mated power actuated valves on rigid wooden skids, fully braced and strapped to prevent damage to valve, actuator or coupling system.

C. Store materials according to manufacturer instructions.

D. Protection:

1. Protect materials from moisture and dust by storing in clean, dry location remote from construction operations areas.
2. Protect valve ends from entry of foreign materials by providing temporary covers and plugs.
3. Provide additional protection according to manufacturer instructions.

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1.10 EXISTING CONDITIONS

A. Field Measurements:

1. Verify field measurements prior to materials ordering or any fabrication.
2. Indicate field measurements on Shop Drawings.

PART 2 - PRODUCTS

2.1 DELEGATED DESIGN

A. Engage a qualified professional engineer, as defined in Sections 013300 “Submittal Procedures” and 014000 “Quality Requirements”, to submit the items listed in the DELEGATED DESIGN SUBMITTALS Article.

2.2 VALVES

A. Description: Valves, operator, actuator, handwheel, chainwheel, extension stem, floor stand, worm and gear operator, operating nut, chain, wrench, and other accessories as required.

B. Provide all valves of the same type by same manufacturer.

C. Valve Ends: Compatible with adjacent piping system and as indicated on valve schedule.

D. Operation:

1. Close by turning clockwise.
2. Cast directional arrow on valve or actuator with OPEN and CLOSE cast on valve in appropriate location.

E. Valve Marking and Labeling:

1. Marking: Comply with MSS SP-25.
2. Labeling (valve tags):

a. Fiberglass reinforced plastic, ASTM D709, 70 mil thick, 2 1/2-inch diameter or 2 1/2-inch by 1 1/4-inch.
b. Lettering 1/16-inch thick of silk screening or other permanent embedment of subsurface printed graphics, permanently sealed.
c. Colors of lettering and backing as selected by Owner.
d. Two, 1/4-inch clear opening Type 316 stainless steel grommets at each end, center of hole 3/8-inch from tag edge.
e. 3/32-inch Type 316 SS cable and splice hardware.

F. Valve Construction: As Specified in Valve Sections.

G. Do not use Van Stone flanges with pinch valves, industrial butterfly valves; elastomer bellows style expansion joints or other piping system components having an elastomer liner (rubber seat) that is used as a gasket.

2.3 VALVE ACTUATORS

A. Provide actuators in accordance with Drawings.

B. Provide mechanical position indicators for power actuated and gearbox actuated valves.

C. Comply with AWWA C541 (Pneumatic and Hydraulic actuators) and C542 (Electric Motor Actuators) as applicable.

D. Provide chain actuators for shutoff valves mounted greater than 7 feet (2.3 m) above operating floor level.

E. Gear and Power actuators as specified in Section 400557 “Actuators for Process Valves and Gates”.

2.4 FINISHES

A. Valve Coating: Comply with AWWA C550.

B. Factory finishes are included in individual valve sections.

C. Stainless Body Valves: Do not coat.

D. Do not coat flange faces of valves unless otherwise specified.

2.5 SOURCE QUALITY CONTROL

A. Testing: Test valves according to manufacturer's standard testing protocol, including hydrostatic, seal, and performance testing.

B. Certificate of Compliance:

1. If manufacturer is approved by authorities having jurisdiction, submit certificate of compliance indicating Work performed at manufacturer's facility conforms to Contract Documents.
2. Specified shop tests are not required for Work performed by approved manufacturer.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that piping system is ready for valve installation.

B. Fully examine valves for debris, damage and interior finish blemishes prior to installation. Do not install valves with soiled interior or any visible damage to seats, discs or interior finish.

C. Identify any piping, plant or equipment clearance issues prior to installation, bring to Engineer's attention via job meetings, submittal process or request for information process.

3.2 INSTALLATION

A. Install valves, actuators, extensions, valve boxes, and accessories according to manufacturer instructions.

B. Inspect valve interiors before line closure for the presence of debris. At the option of the Engineer, internal inspection of valve and appurtenances may be required any time that the likelihood of debris is a possibility. Clean connecting pipes prior to installation, testing, disinfection and final acceptance.

C. Disinfect valves installed in potable water lines with approved pipeline disinfection process.

D. Rigidly support valves to avoid stresses on piping.

E. Coat studs, bolts and nuts with anti-seizing lubricant.

F. Dielectric Fittings: Provide between dissimilar metals.

G. Clean field welds of slag and splatter to provide a smooth surface.

H. Mate, adjust and fully test gearboxes, electric, hydraulic and pneumatic actuators to valves at manufacturer's or integrator's facility.

1. Only in special cases for extremely large assemblies where installation requires disassembly may actuators be mounted to the valves in the field. These circumstances require preinstallation meetings.

I. Do not install stems vertically downward.

J. Unless otherwise indicated on Drawings:

1. Install Gate, Globe, Ball valves with stem vertical in the 12 o'clock position.
2. Install Plug valves with stem horizontal and plug opening to the top of the body unless position will not allow proper actuator access, in which case stem may be vertical in the 12 o'clock position.
3. Install Butterfly valves 12-inch and smaller with stem horizontal or vertical in the 12 o'clock position,
4. Install Butterfly valves 14-inch and larger with the stem horizontal unless position will not allow proper actuator access, in which case stem may be vertical in the 12 o'clock position.
5. Install Control valves in horizontal pipelines with top works vertically upward.

K. Install all brackets, extension rods, guides, the various types of operators and appurtenances as indicated. Before properly setting these items, check all drawings and figures which have a direct bearing on their location.

L. Inspect all materials for defects in construction and materials. Clean debris and foreign material out of openings, etc. Verify valve flange covers remain in place until connected piping is in place. Verify operability of all operating mechanisms for proper functioning. Check all nuts and bolts for tightness. Repaired or replace valves and other equipment which do not operate easily or are otherwise defective.

M. Where installation is covered by referenced standard, install and certify in accordance with that standard, except as herein modified. Also note additional requirements in other parts of this Section.

N. Unless otherwise noted, provide joints for valves and appurtenances utilizing the same procedures as specified under the applicable type connecting pipe joint. Install valves and other items as recommended by the manufacturer. Verify manufacturers' torqueing requirements for all valves.

O. Coordinate direction of flow through offset type and shaped butterfly valve discs with the mated actuator torque capacity.

P. Rotate valve operators and indicators to display toward normal operation locations. Consult with Engineer prior to installing valves with handwheels to confirm final position of handwheel.

Q. Vertically center floor boxes, valve boxes, extension stems, and low floor stands over the operating nut, with couplings as required.

1. Adjust elevation of the box top to conform to the elevation of the finished floor surface or grade at the completion of the Contract.
2. Support boxes and stem guides during concrete placement to maintain vertical alignment.

R. Install brass male adapters on each side of valves in copper-piped system and solder adapters to pipe.

S. Install 1-inch (24-mm) gate valves with cap for drains at main shutoff valves, low points of piping, bases of vertical risers, and equipment.

T. Install valves with clearance for installation of insulation and to allow access.

U. Provide access where valves and fittings are not accessible.

V. Pipe Hangers and Supports: As specified in Section 400507 “Hangers and Supports for Process Piping”.

3.3 FIELD QUALITY CONTROL

A. Valve Field Testing:

1. Test for proper alignment.

2. If specified by valve Section, field test equipment to demonstrate operation without undue noise, vibration, or overheating.
3. Engineer will witness field testing.
4. Functional Test:

    a. Prior to system startup, inspect valves and actuators for proper alignment, quiet operation, proper connection and satisfactory performance.
    b. After installation, open and close all manual valves in the presence of Engineer to show the valve operates smoothly from full open to full close and without leakage.
    c. Cycle valves equipped with electric, pneumatic or hydraulic actuators 5 times from full open to full closed in presence of Engineer to exhibit operation without vibration, jamming, leakage, or overheating.
    d. Operate pressure control and pressure relief valves in the presence of the Engineer to show they perform their specified function at some time prior to placing the piping system in operation and as agreed during construction coordination meetings.

5. Field test pipelines in which the valves and appurtenances are to be installed. During these tests, adjust, remove or replace defective valve or appurtenance, or otherwise make acceptable to Engineer. Test regulating valves, strainers, or other appurtenances to demonstrate conformance with the specified operational capabilities. Correct deficiencies, replace device or otherwise made acceptable to Engineer.

END OF SECTION 400551

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SECTION 400553 - IDENTIFICATION FOR PROCESS PIPING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Stencils.
2. Pipe markers.

B. Related Requirements:

1. Section 099676.13 “Wastewater Collection System Coatings”.
2. Section 400551 “Common Requirements for Process Valves” for basic materials and methods for valves.

1.3 ACTION SUBMITTALS

A. Product Data: Submit manufacturer's catalog literature for each specified product.

B. Shop Drawings:

1. Indicate list of wording, symbols, letter size, spacing of labels, and color-coding for mechanical identification and valve chart and schedule.
2. Indicate valve tag number, location, function, and valve manufacturer's name and model number.

C. Samples: Submit one sample labels pipe markers for each size to be used on Project.

D. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

E. Manufacturer Instructions: Submit detailed instructions on installation requirements, including storage and handling procedures.

1.4 INFORMATIONAL SUBMITTALS

A. Qualifications Statement:

1. Submit qualifications for manufacturer.

1.5 CLOSEOUT SUBMITTALS

A. Project Record Documents: Record actual locations of tagged valves; include valve tag numbers.

1.6 QUALITY ASSURANCE

A. Piping Color Scheme and Lettering Size: Comply with ASME A13.1.

1.7 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing products specified in this Section with minimum three years' documented experience.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Inspection: Accept materials on Site in manufacturer's original packaging and inspect for damage.

B. Store materials according to manufacturer instructions.

C. Protection:

1. Protect materials from moisture and dust by storing in a clean, dry location remote from construction operations areas.
2. Provide additional protection according to manufacturer instructions.

PART 2 - PRODUCTS

2.1 STENCILS FOR DUCTILE IRON PIPING

A. Manufacturers:

1. Kolbi Pipe Marker Co.
2. Marking Services, Inc.
3. Pipemarker.com (Brimar Industries, Inc.)
4. R&R Identification Co.
5. Seton Identification Products.

B. Description:

1. Quality: Clean-cut symbols.
2. Letters:

OUTSIDE DIAMETER

OF PIPE	SIZE OF LETTERS
3/4-inch to 1-1/4 inches	1/2-inch
1-1/2 inches to 2 inches	3/4-inch
2-1/2 inches to 6 inches	1-1/2 inches
8 inches to 10 inches	2-1/2 inches
Over 10 inches	3 inches

C. Stencil Paint:

1. Description: Semigloss enamel.

2.2 PIPE MARKERS FOR THERMOPLASTIC PIPING

A. Plastic Pipe Markers:

1. Manufacturers:

a. Brady ID.
b. Craftmark Pipe Markers.
c. Marking Services, Inc.
d. R&R Identification Co.
e. Seton Identification Products.

2. Description:

a. Factory-fabricated, flexible, and semi-rigid plastic.
b. Preformed to fit around pipe or pipe covering.
c. Larger sizes may be of maximum sheet size, with spring fastener.
d. Letter sizes per Paragraph 2.3B.
e. Color shall be white or black depending on background color.

B. Plastic Tape Pipe Markers:

1. Manufacturers:

a. Brady ID.
b. Craftmark Pipe Markers.
c. Kolbi Pipe Marker Co.
d. Marking Services, Inc.
e. Pipemarker.com (Brimar Industries, Inc.)
f. Seton Identification Products.

2. Description:

a. Flexible, 3.5 mil vinyl film tape with pressure-sensitive adhesive backing and printed markings.
b. Color shall be white or black depending on background color.

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PART 3 - EXECUTION

3.1 PREPARATION

A. Degrease and clean surfaces to receive adhesive for identification materials.

B. Stencil Painting: Prepare surfaces as specified.

3.2 INSTALLATION

A. According to manufacturer instructions.

B. Install identifying devices after completion of coverings and painting.

C. Piping:

1. Identify piping, concealed or exposed, with plastic tape pipe markers or stenciled painting.
2. Identify service, flow direction, and pressure.
3. Install in clear view and align with axis of piping.
4. Locate identification not to exceed 20 feet on straight runs, including risers and drops, adjacent to each valve and tee, at each side of penetration of structure or enclosure, and at each obstruction.

END OF SECTION 400553

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SECTION 400557 - ACTUATORS FOR PROCESS VALVES AND GATES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes: Following types of actuators for linear, multi-turn, and quarter turn valves and gates:

1. Manual actuators.
2. Electric motor actuators.

B. Related Requirements:

1. Section 055000 “Metal Fabrications” for miscellaneous metalwork and fasteners as required.
2. Section 099676.13 “Wastewater Collection System Coatings”.
3. Section 400507 “Hangers and Supports for Process Piping” for hangers, anchors, sleeves, and sealing of piping to adjacent structures.
4. Section 400551 “Common Requirements for Process Valves” for common product requirements for valves for placement by this Section.

1.3 DEFINITION

A. Where the term “valve” alone is used in this Section, it applies to both valves and gates as the corresponding text context dictates.

1.4 COORDINATION

A. Coordinate Work of this Section with installation of valves, gates, and accessories.

1.5 ACTION SUBMITTALS

A. Product Data: Manufacturer information for actuator with model number and size indicated.

B. Shop Drawings:

1. Parts list, materials, sizes, position indicators, limit switches, control system, actuator mounting, wiring diagrams, control system schematics with external interfaces, and on assembly drawings.

2. Actuator Shop Drawings with respective valve submittal.

C. Manufacturer's Certificate: Products meet or exceed specified requirements.

D. Manufacturer Instructions: Special procedures and placement requirements.

1.6 INFORMATIONAL SUBMITTALS

A. Source Quality-Control Submittals: Results of tests and inspections and provide required certifications.

B. Field Quality-Control Submittals: Results of Contractor-furnished tests and inspections.

C. Qualifications Statements:

1. Qualifications for manufacturer and installer.
2. Manufacturer's approval of installer.

1.7 CLOSEOUT SUBMITTALS

A. Project Record Documents: Documentation of actual locations and types of actuators.

1.8 QUALITY ASSURANCE

A. Valve Actuators in NEC Class 1, Division 1 or 2, Group C & D, Hazardous Locations: Comply with NFPA 70.

B. Minimum NEMA Enclosure Classification:

1. Non-submergence Installations: NEMA 4X.
2. Submergence Installations: NEMA 6P/IP68.

C. Single Source Requirements:

1. Furnish electric motor actuators in the scope of the project by same manufacturer. Coordinate this requirement with actuated valves and gates included in scope of vender furnished equipment.
2. Furnish actuators, floor stands, stem guides, stems, extensions, and accessories for slide gate assemblies by slide gate manufacturer.

D. Mate actuators to equipment at equipment manufacturer’s or integrator’s facility.

1. Test assembled product. Certify ready for installation prior to shipment to job site.
2. For extremely large assemblies requiring disassembly for installation, the actuator may be disassembled for shipment and remounted in the field.

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1.9 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing products specified in this Section with minimum five years' documented experience.

1.10 DELIVERY, STORAGE, AND HANDLING

A. Inspection: Accept materials on Site in manufacturer's original packaging and inspect for damage.

B. Store materials according to manufacturer instructions.

C. Protection:

1. Protect materials from moisture and dust by storing in clean, dry location remote from construction operations areas.
2. Furnish temporary end caps and closures on piping and fittings and maintain in place until installation.
3. Provide additional protection according to manufacturer instructions.

1.11 EXISTING CONDITIONS

A. Field Measurements:

1. Verify field measurements prior to fabrication.
2. Indicate field measurements on Shop Drawings.

1.12 WARRANTY

A. Manufacturer’s Special Warranty: Submit standard written warranty against manufacturing defects for actuators.

1. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 GENERAL

A. Refer to valve and gate schedule for actuator type, accessories, and sizing information.

B. Provide clockwise closed actuation unless otherwise noted on the valve and gate schedule.

C. Supply chain actuators for manual valves located 7 feet (2.1 m) or higher above finished floor.

2.2 ACCESSORIES

A. Floor Stands:

1. Materials:

a. Stand: Cast iron.
b. Stem Bushing: Sintered bronze.
c. Position Indicator: Bronze.

2. Height to input shaft or handwheel: 36-inch (914 mm).
3. Base Mounting Requirements:

a. Concrete Floor Mounting: Type 316 stainless steel anchor bolts.
b. Face of Basin or Offset Mounting: Heavily reinforced, adjustable wall bracket with required anchor hardware using Type 316 stainless steel.

4. Actuator Mounting Requirements:

a. Manual Actuator: Cast iron handwheel on top of floor stand with dual ball type thrust bearings, grease fitting on bearing bowl, hardened machined alloy bronze lift nut (for rising stem). Where manual effort is greater than 40 lb (18.1 kg) rim pull with 2 feet (610 mm) diameter wheel, provide geared actuator with handwheel or crank.

1) Handwheel casting to include the word “OPEN” and an arrow indicating the direction of operation.

b. Gearbox or Direct Powered Actuator: Through bolt holes matched to actuator or gearbox bolting pattern.

5. Non-rising stem position indicator: Mechanical indicator connected to and driven by stem extension and cast position marks on floor stand with the word “OPEN” cast at the top of the travel, and a field mounted aluminum “CLOSED” tag supplied with drive rivets, installed based on number of valve turns.
6. Rising Stem Position Indicator: Permanent markings on transparent stem covers.

B. Stem Covers: Fracture-resistant clear polycarbonate or butyrate plastic stem covers for rising stems. Closed top with adhesive type position indicator markings.

C. Extension Stems and Stem Guides:

1. Manufacturers:

a. Geneco.
b. Custom Gab, with center ring and set screws.

2. Extension stems and couplings to actuate recessed, buried, below slab valves and gates via operating nut or floor stand mounted actuator.

3. Stem Extensions and Stem Couplings: Alloy steel, hardware of Type 316 stainless steel unless specified otherwise in the respective slide gate specification.
4. Stem and Stem Couplings: Rated for five times the maximum input torque capacity of the actuator.
5. Adjustable, Cast Iron Wall Bracket Type Stem Guides: Include two-piece, bronze or UHMW bushing.
6. Spacing: 10 feet (3048 mm) spacing or at spacing calculated by manufacturer to prevent buckling with a safety factor of 2 based on design thrust, shaft material and shaft size.

D. Torque Tubes:

1. Supply where shown on Drawings or Valve and Gate Schedule.
2. Supported by/mated to valve bonnet/yoke.
3. Sized by supplier for required actuator torque.
4. Drilled specifically for valve and actuator bolt pattern.
5. Internal extension keyed or shaped specifically to mate to valve shaft and fabricated of Type 316 stainless steel.
6. Internal extension designed for axial adjustment for mating purposes.

2.3 MANUAL ACTUATORS

A. Operating Nuts:

1. 2-inch (51 mm) cast iron AWWA design.

    a. Painted Carbon Steel Tee Handle Operator: 2-inch (51 mm) AWWA nut socket end extension length for nut actuated valves where nuts are recessed in valve boxes.
    b. Tee Extension Length: Determine based on nut height as shown on Drawings with handle height approximately 3 feet (914 mm) above operating surface.

2. Operating Nuts Recessed on Concrete: Cast iron floor box with cover and tee handle operator with 2-inch (51 mm) AWWA nut socket end.
3. Nut Operated Non-Rising Stem Buried Valves: Cast iron bonnet skirts, extension pipes valve box and cover. Stem extensions with AWWA nut end to elevation shown on the Drawings or scheduled.
4. Two tee handles for every ten buried or encased non-rising stem application with 2-inch (51 mm) AWWA operating nut.
5. Valve Boxes

    a. Manufacturers:

        1) Russco VB262-SEWER LID.
        2) Tyler Series 6850-SEWER LID.
        3) Star VB562S-SEWER LID.

    b. Alignment Rings.

        1) BOXLOX #1 or #2.

c. Description:

1) 12-inch Diameter Valves and Smaller:

a) Material: Cast iron.
b) Type: Two-piece, screw.

d. All buried valves shall be provided with extension shafts, operating nuts and valve boxes as follows:

1) Extension shafts shall be Type 304 stainless steel and the operating nut shall be 2-inches square. Shafts shall be designed to provide a factor of safety of not less than four. Operating nuts shall be pinned to the shafts.
2) Top of operating nut shall be located two-inches below rim of the valve box.
3) Valve boxes will be at least 4-1/2-inches.
4) Barrel length shall be adapted to the depth of cover, with a lap of at least 6-inches when in the most extended position.
5) Covers shall be cast iron with integrally-cast direction-to- open arrow, and the word “SEWER” shall also be integrally cast.
6) Aluminum or plastic are not acceptable.
7) A means of lateral support for the valve extension shafts shall be provided in the top portion of the valve box.
8) The upper section of each box shall have a top flange of sufficient bearing area to prevent settling.
9) The bottom of the lower section shall enclose the stuffing box and operating nut of the valve and shall be oval.
10) All fasteners shall be Type 304 stainless steel.

B. Gear-Assisted Manual Valve Actuators:

1. Provide:

a. For manually actuated valves and gates larger than 8-inch (203 mm) nominal diameter and for ball and plug valves 6-inch (152 mm) and larger.
b. With power actuators where torque requirements dictate.

2. Comply with AWWA C504.
3. Handwheel Diameter: 8-inch (203 mm) minimum.
4. Maximum Handwheel Pull: 40 lbs (4.45 N) maximum.
5. Housings: Cast or ductile iron.
6. Worm or helical gear type.
7. Gears: Hardened steel, machine cut and mated.
8. Bearings: Permanently lubricated bronze.
9. Input and Output Shafts: Sealed with greased, waterproof machine shaft seals.
10. Filled with waterproof grease and designed for submerged service where scheduled.
11. Handwheel: Removable.

a. Diameter: 8-inch (203 mm) up to 12-inch (305 mm) valve size.
b. Diameter: 12-inch (305 mm) diameter up to 16-inch (406 mm) valve size.
c. Diameter: 18-inch (457 mm) diameter for larger than 16-inch (406 mm) valve size.

d. Maximum Diameter: 24-inch (610 mm) diameter.

12. Include mechanical top mounted valve position indication, opening direction, and adjustable stops.

C. Chain Wheels:

1. Supply for manual valves 3-inch (75 mm) diameter or larger mounted 7 feet (2.1 m) and greater above operating floor level.
2. Type: Sprocket rim with chain and floating chain guide.
3. Chain Wheel and Guides Materials: Cast iron with hot-dip galvanized chain.
4. Chain Length: Extend to 5-1/2 feet (1.7 m) above operating floor level.
5. Chain Storage: Include where chains may interfere with personnel egress, made with high-strength thermoplastic polymer in safety orange color.

a. Basis-of-Design: Trumbull, Model 'Chain Up' as manufactured by Trumbull Manufacturing. Inc., or equal.

6. Chain Wall Hooks: Include where feasible to prevent chain from impeding personnel egress.

2.4 ELECTRIC MOTOR ACTUATORS

A. General:

1. Where specified on the Valve and Gate Schedule.
2. Comply with AWWA C542.
3. Actuators for Valves 3 inches (76 mm) and Smaller: 120 Volt, 1 Phase, 60 Hertz power supply.
4. Actuators for Valves Larger than 3 inches (76 mm) and for slide gates and weir gates: 480 Volt, 3 Phase, 60 Hz power supply.

B. 120 Volt Power Actuators:

1. Actuators to have reversing motor, reduction gearing, local position indicator, position limit switches, provision for manual override, 100 to 1000 in-lbs (11.3 to 113 N-m) torque range and motor thermal and electronic control protection.
2. Enclosure:

a. Cast aluminum or steel alloy.
b. Powder coated or fusion bonded epoxy finish.
c. NEMA 7 for Class 1, Division 1 or 2, Groups C & D hazardous environment.

3. Motors:

a. Design for valve actuation service.
b. Insulation: Class F.
c. Split phase capacitor protection.
d. Duty Cycle: 40 percent at 100 degrees F (37.8 degrees C) for open/close duty, and 100 percent for modulating duty.

e. 90-Degree Travel Time: 10 to 20 seconds depending on actuator size.
f. Actuator Switches: Have two SPDT 15 Amp rated switches for remote open/close valve position indication.

4. Products: Subject to compliance with requirements, provide one of the following or equal:

a. Series 92 as manufactured by Asahi/America.
b. EPM-6 by Hayward.
c. P Series as manufactured by Promation Engineering, Inc.
d. Or equal.

C. 480 Volt Power Actuators:

1. General: 2 phase 60 hz supply rated, self-contained, totally enclosed with motor, integral reversing starters, local controls, reduction gearing, limit switch gearing, limit switches, control power transformer, torque switches, bored and keyed drive sleeve for non-rising stems, declutch lever, auxiliary handwheel, and local position indication.
2. Separately seal motor and control compartments with space heaters in limit switch, motor, and control compartments.
3. Suitable for indoor and outdoor use, fully functional in ambient temperature range from 40 to 140 degrees F (4.4 to 60 degrees C) at 100 percent relative humidity.
4. Size to guarantee full travel, seating and unseating torque or thrust as specified by the valve or gate manufacturer.
5. Size to provide torque required to operate valve or gate at 90 percent of nominal voltage.
6. Design Travel Rate:

a. As indicated on valve and gate schedule, and if not so indicated:

1) Gate Valves and Slide Gates: 12 inches (305 mm) per minute.

7. Enclosure:

a. Cast iron construction.
b. NEMA 7 for Class 1, Division 1 & 2, Groups C & D hazardous environment.
c. Operate successfully a minimum of 10 full cycles under submersion.
d. External Fasteners: Type 316 stainless steel.
e. Include anti-condensation heater, suitable for continuous operation with alarm output to indicate heater failure.

8. Motors:

a. High-starting torque; low stall torque, low inertia, designed and built by actuator manufacturer.
b. Embed thermistor in each motor winding for thermal protection.
c. Insulation: Class F, with a duty rating of at least 15 minutes at 40 degrees F (4.4 degrees C) ambient temperature.
d. Electrical disconnection by means of plug and socket. Allow motor removal without loss of lubricant.
e. Hardware to ensure motor runs with correct rotation for required direction of valve travel regardless of power supply connection sequence.

9. Motor Protection:

    a. De-energize without damage in event of a stall condition when attempting to move a jammed valve.
    b. De-energize in the event of over-torque condition.
    c. Imbed minimum of three thermal devices in motor windings to de-energize the motor in case of overheating.
    d. Lost phase protection algorithm.

10. Gear Train:

    a. Grease filled, O-ring sealed in cast or ductile iron gear case.
    b. Suitable for operation in any orientation.
    c. Hardened, machine cut steel gears, and precision machined alloy bronze worm gear.
    d. Reduction gearboxes as specified in Paragraph "Gear-Assisted Manual Valve Actuators."

11. Manual Operation:

    a. Handwheel which does not rotate during motor operation.
    b. Output contact with declutch mechanism to indicate manual operation.
    c. Utilize actuator worm shaft/worm wheel to maintain self-locking gearing and to facilitate changeover from motor to manual operation when the actuator is under load. Do not use designs that bypass actuator worm gear or break valve load at worm gear.
    d. Automatic return from manual to motor operation upon starting motor.
    e. Manual operation capable with seized motor.

12. Position and Torque Calibration:

    a. Sensing by absolute encoder using hall effect sensors. Incremental encoders requiring batteries to retain settings upon loss of power are not acceptable. Settings stored in permanent non-volatile memory.
    b. Torque and travel adjustment parameters:

        1) Position Setting Range: 1 to 500 turns, with resolution of 2.81 degrees and accuracy to 5.0 degrees of actuator output.
        2) Torque Setting: 40 to 100 percent of rated torque.

    c. Torque switch bypass for the torque sensing system to inhibit torque switch trip during unseating or during starting in mid-travel against high inertia loads.

13. Wiring and Terminals:

    a. Tropical grade insulated stranded cable of appropriate size for the control and 3-phase power.
    b. Include a removable plug and socket head for termination of all external wiring. Include actuators without plug and socket terminal connections having power and control disconnect switches for ease of maintenance and safety.

14. Controls:

    a. Microprocessor: Based with mechanically and electronically interlocked reversing contactors for Open/Close duty and solid-state contactors for modulating duty.
    b. Local/Off /Remote Selector Switch and Open/Stop/Close Pushbuttons: Mount on actuator face with red and green indication lights for open/close and amber for fault.
    c. Remote On/Off Service: Actuator to accept one remote signal to open and a second remote signal to close.
    d. Modulating Service: When in remote mode, actuator to accept a 4 to 20 mA DC position control signal and position valve 0 to 100 percent of travel in proportion to control signal.
    e. Monitoring Relays: Remotely indicate fault signal for indication of power failure, phase failure, thermal switch tripped, torque switch tripped between travel stops, and Local-Off-Remote selector switch position.
    f. Gear Actuated Position Transmitter: On modulating duty actuator that is a two-wire device, produce 4 to 20 mA DC signal proportional to 0 to 100 percent travel.
    g. Transmitter: Have easily accessible zero and span adjustment potentiometers.
    h. DC Power Supply: Integral with operator and powered from 110-volt AC internal transformer. Positioner board to provide repeatable accuracy to 0.25 percent of span and have separate trim pots for zero, span, and dead band adjustment.

15. Position Indication: Continuous mechanical dial indication of valve and gate position in step with the actuator at all times in both the hand wheel and motor operation. For modulating applications, graduations on mechanical dial position indicator to be 0 to 100 percent scale.
16. Limit Switches:

    a. Adjustable type to trip at any point between fully opened and fully closed.
    b. Mid-travel Switches: Provide as noted in valve and gate schedule.
    c. Do not allow set position to be lost if over travel occurs in either manual or electric modes of operation.
    d. Two independent and fully adjustable rotary type position limit switches each with 15 Amp DPDT contacts for remote open/close position indication.

17. Torque Switches: Actuator with adjustable torque switches and be responsive to load encountered in either direction of travel.
18. Terminal Compartment:

    a. Separate from the inner electrical components of actuator with a watertight seal.
    b. Three threaded cable entries.
    c. Stud-type Terminals: Embed in terminal block of high tracking-resistance compound.
    d. Three-phase Power Terminals: Shroud from control terminals by means of insulating cover.

19. Remote Control Stations:

a. For actuators located below the operating floor or located more than 7 feet (2.1 m) above the operating floor, provide a UL Listed remote control station at the operating floor level with the same enclosure rating as the actuator.
b. Include a Local/Off/Remote selector switch, Open/Stop/Close pushbuttons and Open/Close indicating lights.

1) Local/Off/Remote selector to include padlock mount for the Off position.

c. Include auxiliary contacts for remote indication of switch position.

20. Manufacturers: Provide products by one of the following or equal.

a. IQ/IQM as manufactured by Rotork, Plc.
b. Limitorque QX/MX as manufactured by Flowserve Corporation.
c. EIM TEC2000 as manufactured by Allied Valve, Inc.
d. AUMA SA/SAR as manufactured by AUMA Riester GmbH & Co. KG.

2.5 SOURCE QUALITY CONTROL

A. Factory Testing:

1. Shop inspect and test completed assemblies.
2. Factory performance test each actuator and supply individual test certificates. Submit test certificates prior to shipment of valve actuators. Test equipment to simulate a typical valve and gate load, and record the following parameters:

a. No load current.
b. Current at maximum torque setting.
c. Stall current.
d. Torque at maximum torque setting.
e. Stall torque.
f. Test voltage and frequency.
g. Flash test voltage.
h. Actuator output speed.

B. Certificate of Compliance:

1. If manufacturer is approved by authorities having jurisdiction, submit certificate of compliance indicating Work performed at manufacturer's facility conforms to Contract Documents.
2. Specified shop tests are not required for Work performed by approved manufacturer.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify field dimensions are as indicated on Shop Drawings.

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3.2 INSTALLATION

A. Install products plumb, square, and true according to manufacturer's published installation instructions.

B. Securely mount actuators using brackets or hardware specifically designed for attachment to valves/gates.

C. Extend chain actuators to 5-1/2 feet (1.7 m) above operating floor level.

3.3 FIELD QUALITY CONTROL

A. After installation, inspect for proper supports and interferences according to manufacturer's requirements and Section 400551 "Common Requirements for Process Valves".

3.4 ADJUSTING

A. Occupancy Adjustments: When requested within 12 months of date of Substantial Completion, provide on-site assistance in adjusting system to suit actual occupied conditions. Perform adjustments during normal occupancy hours.

3.5 DEMONSTRATIONS

A. Engage factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain actuators.

1. Time Duration: Allow four hours during a single day.

END OF SECTION 400557

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SECTION 400561 - GATE VALVES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Tapping valves and sleeves.

B. Related Requirements:

1. Section 400551 “Common Requirements for Process Valves” for basic materials and methods related to valves commonly used for process systems.
2. Section 400557 “Actuators for Process Valves and Gates”.

1.3 DEFINITIONS

A. Outside screw and yoke (os&y) valve: A valve in which the operating screw is driven by threaded nut that is built into the handle.

1.4 SUBMITTALS

A. As specified in Section 400551 “Common Requirements for Process Valves” for submittal requirements for compliance with this section.

1.5 QUALITY ASSURANCE

A. Test valves in accordance with AWWA C500, C509, C515.

B. Provide Installation Inspection and Operator Training per Section 400551.

C. Provide testing and inspection certificates.

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PART 2 - PRODUCTS

2.1 TAPPING VALVES AND SLEEVES – Tag Type TPGV

A. Manufacturers:

1. AVK – Series 25.
2. AFC – Series 2500.
3. Mueller – Series T-2360 or Series A-2361.
4. Clow – F6114.

B. Description:

1. Water service.
2. As specified in Section 400551 “Common Requirements for Process Valves”.
3. As specified above depending on valve type.
4. Gate Guide: Plugged, bottom flush port.
5. Include tap for pressure/leak testing.
6. Pass full, normal sized cutter.

C. Connection:

1. MSS-SP-60, Mechanical joint.
2. Tapping service port.

D. Materials:

1. Wedge Disc: Styrene butadiene rubber.

2.2 SOURCE QUALITY CONTROL

A. As specified in Section 400551 “Common Requirements for Process Valves”.

B. Testing: Test gate valves according to AWWA C509.

C. UL and FM approved.

PART 3 - EXECUTION

3.1 General:

A. All valves shall be installed in accordance with provisions of Section 400551 “Common Requirements for Process Valves”.

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3.2 INSTALLATION

A. According to AWWA C509.

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SECTION 400562 - PLUG VALVES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes: Eccentric plug valves.

B. Related Requirements:

1. Section 400551 “Common Requirements for Process Valves” for basic materials and methods related to valves commonly used for process systems.

1.3 SUBMITTALS

A. As specified in Section 400551 “Common Requirements for Process Valves” for submittal requirements for compliance with this Section.

1.4 QUALITY ASSURANCE

A. Test valves in accordance with AWWA C517

B. Provide Installation Inspection and Operator Training per Section 400551 “Common Requirements for Process Valves”.

C. Provide testing and inspection certificates.

PART 2 - PRODUCTS

2.1 ECCENTRIC PLUG VALVES – Tag Type PV1

A. Manufacturers:

1. DeZurik.
2. Or City Approved Equal.

B. Description:

1. As specified in Section 400551 “Common Requirements for Process Valves”.
2. Type:

a. Offset disc type.
b. Non-lubricated.
c. Serviceable (able to be repacked) under full line pressure.
d. Eccentric.
e. Capable of sealing in both directions at the rated pressure.
f. Unobstructed flow path when open.
g. Drop tight shut-off to the full valve rating with pressure on either side of plug.

3. Body:

a. 30,000-psi tensile strength.
b. Top entry, bolted bonnet.
c. Body shall be cast with integral piping connections.

4. Plug:

a. To be removable without removing the valve from line.
b. To have an integral upper and lower shaft:

1) Seals on upper and lower journals to prevent entrance of solids into journals.

c. One piece for all valves.

5. Bearings:

a. Permanently lubricated.

6. Minimum Working Pressure: 175 psi at 70 Degrees F.

a. At the above rated minimum working pressures, certified by the manufacturer as permitting zero leakage for a 5-minute duration with full pressure applied in either direction.

7. Maximum Process Fluid Temperature: 104 Degrees F.
8. Ports:

a. Configuration: Round or Rectangular.
b. Minimum Port Area: 80 percent of nominal pipe area for valves 20 inches and smaller; 70 percent for valves larger than 20 inches.

9. Seats:

a. Full 360 degree seating by contact of a resilient seating material on the plug mating with welded-in seating surface in the body.
b. Screw in body seats not acceptable.
c. Resilient and of the continuous interface type having consistent opening and closing torques.
d. Non-jamming in the closed position.

10. Stem Bearings: Self-lubricating.

11. Stem Seals:

    a. Type: V-ring.
    b. Externally adjustable and repackable without removing the bonnet from the valve, or self-adjusting.

12. Packing and Gland: Accessible and externally adjustable.
13. End Connections:

    a. Mechanical Joint: Comply with ANSI/AWWA C111/A21.11.
    b. Flanged: Comply with ASME B16.1 and B16.42.

C. Operation:

1. As specified in Section 400551 “Common Requirements for Process Valves”.
2. A suitably sized steel actuator mounting bracket shall be provided to provide air gap between the actuator and the valve stem seal. Under no circumstance shall the gear box be mounted directly to top body flange such that leakage could directly enter the gear box.
3. Provide adjustable limit stops for both opening and closing and clearly marked position indicator.
4. 4 inches and Smaller: Manual, provided with its own securely attached lever.
5. Greater Than 4 inches: Worm gear manual operators with handwheel.
6. Furnish chain wheel operators for valves mounted over 7 feet above operating floor.

D. Materials:

1. Body:

    a. Cast iron, AWWA C517 or Ductile iron, ASTM A536.
    b. Lining: Epoxy coating, as recommended by valve manufacturer for service conditions.

2. Plug:

    a. Cast iron, AWWA C517, Ductile iron, ASTM A536, Grade 65-45-12, or Cast iron ASTM A126, Grade B.
    b. Lining: Resilient coating, as recommended by valve manufacturer for service conditions.

3. Seats: Type 316 Stainless steel.
4. Stem: Type 316 Stainless steel.
5. Stem Bearings: Bronze or Type 316 Stainless steel.
6. Seals: PTFE.
7. Connecting Hardware: Type 316 Stainless steel.

E. Finishes: As specified in Section 400551 “Common Requirements for Process Valves”.

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2.2 SOURCE QUALITY CONTROL

A. As specified in Section 400551 “Common Requirements for Process Valves”.

B. Testing: Hydrostatic Test Per ANSI B16.1 and B16.5.

C. Submit an affidavit of compliance stating that the valves have been manufactured and tested in accordance with AWWA C504-00, Section 5.2.4 and specifically list all exceptions.

PART 3 - EXECUTION

3.1 EXAMINATION

A. As specified in Section 400551 “Common Requirements for Process Valves” for submittal requirements for compliance with this Section.

3.2 INSTALLATION

A. According to AWWA C517.

B. Horizontal Piping: Stem horizontal, Plug opening to crown of body.

C. Vertical Piping: Plug at top when closed.

D. Plugs: On top when open and on pressure side when closed.

END OF SECTION 400562

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SECTION 400565.33 – RUBBER FLAPPER CHECK VALVES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Rubber flapper check valves 3 inches and larger.

B. Related Requirements:

1. Section 400551 “Common Requirements for Process Valves” for basic materials and methods related to valves commonly used for process systems.

1.3 COORDINATION

A. Section 400551 “Common Requirements for Process Valves” for valve schedules.

B. Coordinate Work of this Section with piping and equipment connections as specified in other Sections and as indicated on Drawings.

1.4 ACTION SUBMITTALS

A. Product Data: Submit manufacturer's catalog information, indicating materials of construction and compliance with indicated standards.

B. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

C. Source Quality-Control Submittals: Indicate results of tests and inspections and provide required certifications.

1.5 INFORMATIONAL SUBMITTALS

A. Field Quality-Control Submittals: Indicate results of Contractor-furnished tests and inspections.

B. Qualifications Statement:

1. Submit qualifications for manufacturer.

2. American Iron and Steel (AIS): Submit certification indicating compliance with AIS requirements.

1.6 CLOSEOUT SUBMITTALS

A. Project Record Documents: Record actual locations of piping, valves and other appurtenances, connections, and centerline elevations.

1.7 QUALITY ASSURANCE

A. Materials in Contact with Potable Water: Certified according to NSF 61 and NSF 372.

1.8 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing products specified in this Section with minimum five years' documented experience.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Inspection: Accept materials on Site in manufacturer's original packaging and inspect for damage.

B. Store materials according to manufacturer instructions.

C. Protection:

1. Protect materials from moisture and dust by storing in clean, dry location remote from construction operations areas.
2. Protect valves and appurtenances by storing off ground.
3. Protect valve ends from entry of foreign materials by providing temporary covers and plugs.
4. Provide additional protection according to manufacturer instructions.

1.10 WARRANTY

A. Furnish one-year manufacturer's warranty for rubber flapper check valves.

PART 2 - PRODUCTS

2.1 RUBBER FLAPPER CHECK VALVES 3-INCH AND LARGER - Tag Type RFCV

A. Manufacturers:

1. DeZurik APCO CRF 100.
2. Substitutions: Not permitted.

B. Description:

1. Comply with AWWA C508.
2. Size: 3 inches and larger.
3. Type: Swing, rubber encapsulated metal disc, movement provided by flexing of reinforced rubber tab.
4. Seat: resilient, integral with rubber disc encapsulation.
5. Minimum Working Pressure: 175 psig at 70 degrees F.
6. Maximum Fluid Temperature: 104 degrees F.
7. Accessories:

    a. Spring assist.
    b. Position limit switch.

8. Mounting: Horizontal.
9. End Connections: Flanged, ASME B16.1.

C. Materials:

1. Body and Cover: Cast iron, ASTM A126 or Ductile iron, ASTM A536.
2. Disc: Steel encapsulated with reinforced EPDM rubber.
3. Seat: integral to disc encapsulation.
4. Cover hardware: Type 316 stainless steel.
5. Closure spring: Type 316 stainless steel.
6. Dampener: Type 316 stainless steel.
7. Connecting Hardware: Type 316 stainless steel.

D. Controls

1. Position switches: lever type, NEMA 7 enclosure, SPST, 120VAC, 6A, Square D Type 9007CR or approved equal.
2. Bracket and hardware: Type 316 stainless steel.

E. Finishes: As specified in Section 400551 “Common Requirements for Process Valves.”

2.2 SOURCE QUALITY CONTROL

A. Section 400551 “Common Requirements for Process Valves.”

B. Testing:

1. Hydrostatically test check valves at twice rated pressure according to AWWA C508.
2. Permitted Leakage at Indicated Working Pressure: None.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that field dimensions are as indicated on Shop Drawings.

B. Inspect existing flanges for nonstandard bolt-hole configurations or design and verify that new valve and flange mate properly.

3.2 PREPARATION

A. Thoroughly clean valves before installation.

B. Surface Preparation:

1. Touch up shop-primed surfaces with primer as specified.
2. Solvent-clean surfaces that are not shop primed.
3. Clean surfaces to remove loose rust, mill scale, and other foreign substances by commercial sand blasting; SSPC SP 6.
4. Prime surfaces as specified.

3.3 INSTALLATION

A. According to AWWA C508 and manufacturer instructions.

B. Dielectric Fittings: Provide between dissimilar metals.

3.4 FIELD QUALITY CONTROL

A. Inspection:

1. Inspect for damage to valve lining or coating and for other defects that may be detrimental as determined by Engineer.
2. Repair damaged valve or provide new, undamaged valve.
3. After installation, inspect for proper supports and interferences.

B. Pressure test valves with piping.

3.5 CLEANING

A. Keep valve interior clean as installation progresses.

B. After installation, clean valve interior of soil, grit, loose mortar, and other debris.

END OF SECTION 400565.33

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SECTION 400578.29 - COMBINATION AIR VALVES FOR WASTEWATER SERVICE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes: Combination air valves for wastewater treatment facilities.

B. Related Requirements:

1. Section 400507 “Hangers and Supports for Process Piping” for anchors and supports.
2. Section 400551 “Common Requirements for Process Valves” for typical product and installation requirements for valves specified in this Section.

1.3 ADMINISTRATIVE REQUIREMENTS

A. Coordination:

1. Coordinate Work of this Section with installation of process piping.

B. PREINSTALLATION MEETINGS

1. Section 400551 ”Common Requirements for Process Valves”.

1.4 ACTION SUBMITTALS

A. Shop Drawings: Indicate materials, dimensions, weights, and end connections on assembly drawings.

1.5 INFORMATIONAL SUBMITTALS

A. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

B. Product Data: Submit manufacturer catalog information.

C. Manufacturer Instructions: Submit special procedures and setting dimensions.

D. Source Quality-Control Submittals: Indicate results of tests and inspections.

E. Field Quality-Control Submittals: Indicate results of Contractor-furnished tests and inspections and provide required certifications.

F. Manufacturer Reports: Certify that equipment has been installed according to manufacturer instructions.

G. Qualifications Statements:

1. Submit qualifications for manufacturer and installer.
2. Submit manufacturer's approval of installer.
3. American Iron and Steel (AIS): Submit certification indicating compliance with AIS requirements.

1.6 CLOSEOUT SUBMITTALS

A. Project Record Documents: Record actual locations of combination air valves.

1.7 QUALITY ASSURANCE

A. Manufacturer Quality Management System: Certified to ISO 9001.

1.8 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing products specified in this Section with minimum five years' documented experience.

B. Installer: Company specializing in performing Work of this Section with minimum five years' documented experience.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Inspection: Accept materials on Site in manufacturer's original packaging and inspect for damage.

B. Store materials according to manufacturer instructions.

C. Protection:

1. Protect materials from moisture and dust by storing in clean, dry location remote from construction operations areas.
2. Furnish temporary end caps and closures on piping and fittings and maintain in place until installation.
3. Provide additional protection according to manufacturer instructions.

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1.10 FIELD CONDITIONS

A. Field Measurements:

1. Verify field measurements prior to fabrication.
2. Indicate field measurements on Shop Drawings.

1.11 WARRANTY

A. Furnish one-year manufacturer's warranty for combination air valves.

PART 2 - PRODUCTS

2.1 COMBINATION AIR VALVES FOR WASTEWATER SERVICE – Tag Type ASC

A. Manufacturers:

1. ARI Model: 2 inch D-025.
2. APCO Model: 2 inch ASV-401.
3. Vent-O-Mat Model: 2 inch Series RGXII.
4. Val-Matic Model: 2 inch VM-801A.

B. Description:

1. Type:

a. Fully automatic, float operated.
b. Body: Single or Double.

2. Comply with AWWA C512.
3. Size: As indicated on Drawings.
4. Suitable for sewage service.
5. Provide with flushing capabilities.
6. Pressure Rating: 150 psig.
7. Combination air valves:

a. Perform functions of an air/vacuum valve (exhaust large quantities of air on start-up, admits air on shutdown) and air release valves (release air continuously during operation) to maintain system efficiency and prevent pipeline surges.

C. Materials:

1. Body and Cover: Epoxy lined Cast iron, ASTM A126, Epoxy lined Ductile iron, ASTM A536, or Stainless steel, ASTM A351.
2. Float: Type 316 Stainless Steel.
3. Seats: Buna-N.
4. Seals: Buna-N.

5. Trim: Type 316 Stainless Steel.
6. Hardware: Type 316 Stainless Steel.

D. End Connections - Single Body:

1. Size 4 inches and Smaller:

a. Threaded, NPT.
b. 1-inch Valves: Furnish 2-inch inlet.

2. Backwash Accessories: Furnish three additional NPT connections.

E. End Connections - Double Body:

1. Size 3 inches and Smaller:

a. Threaded, NPT.
b. 1-inch Valves: Furnish 2-inch inlet.

2. Size 4 inches and Larger: Flanged, ASME B16.1.
3. Backwash Accessories: Furnish three additional NPT connections.

F. Valve Body Connections:

1. Threaded, NPT.
2. Cleanout: 2 inches.
3. Drain: 1-inch.

G. Accessories:

1. Backwash accessories, including inlet shutoff valve, blowoff valve, rubber supply hose, and quick-disconnect couplings.
2. Epoxy lining for cast-iron or ductile iron combination air valves.
3. Throttling device on outlet. Initially throttled to 5% open.

2.2 FINISHES

A. Prepare piping appurtenances for field finishes as specified.

2.3 SOURCE QUALITY CONTROL

A. Provide shop inspection and testing of completed assembly.

B. Certificate of Compliance:

1. If fabricator is approved by authorities having jurisdiction, submit certificate of compliance indicating Work performed at fabricator's facility conforms to Contract Documents.
2. Specified shop tests are not required for Work performed by approved fabricator.

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PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that field dimensions are as indicated on Shop Drawings.

B. Inspect existing flanges for nonstandard bolt hole configurations or design and verify that new pipe and flanges mate properly.

3.2 PREPARATION

A. Thoroughly clean end connections before installation.

B. Close pipe and equipment openings with caps or plugs during installation.

C. Cleaning: Clean surfaces to remove foreign substances.

3.3 INSTALLATION

A. According to manufacturer instructions.

B. Provide access for operation, removal, and maintenance, and to avoid discharge to occupied areas or other equipment.

C. Vent the valve properly and pipe outlet to nearest drain or as directed by Engineer.

3.4 FIELD QUALITY CONTROL

A. Inspect for interferences and proper supports.

B. Testing:

1. As specified in Section 400551 “Common Requirements for Process Valves”.
2. Demonstrate operation without undue noise or vibration.

C. Manufacturer Services: Furnish services of manufacturer's representative experienced in installation of products furnished under this Section for not less than eight hours on Site for installation, inspection, startup, field testing, and instructing Owner's personnel in operation and maintenance of equipment.

D. Equipment Acceptance:

1. Adjust, repair, modify, or replace components failing to perform as specified and rerun tests.
2. Make final adjustments to equipment under direction of manufacturer's representative.
3. Repair damaged coatings with material equal to original coating.

E. Furnish installation certificate from equipment manufacturer's representative attesting that equipment has been properly installed and is ready for startup and testing.

3.5 CLEANING

A. Keep interior of air release valves clean as installation progresses.

3.6 DEMONSTRATION

A. Demonstrate equipment startup, shutdown, routine maintenance, and emergency repair procedures to Owner's personnel.

END OF SECTION 400578.29

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SECTION 406100 - PROCESS CONTROL AND ENTERPRISE MANAGEMENT SYSTEMS GENERAL PROVISIONS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes procurement of the services of a Process Control System Supplier (PCSS) to provide all materials, equipment, labor, and services required to achieve a fully integrated and operational system as specified herein, in “Related Requirements” under this Article, and in related drawings, except for those services and materials specifically noted.

B. Applications Engineering System Supplier (AESS) programming services will be performed by the PCSS.

C. Include auxiliary and accessory devices necessary for system operation or performance, such as transducers, relays, signal amplifiers, intrinsic safety barriers, signal isolators, software, and drivers to interface with existing equipment or equipment provided by others under other Sections of these specifications, whether indicated on the Drawings or not.

D. All equipment and installations to satisfy applicable Federal, State and local codes. Refer to Electrical drawings for area classifications for Class and /Division ratings.

E. Use the equipment, instrument, and loop numbering scheme indicated on the Drawings and in the specifications in the development of the submittals. Do not deviate from or modify the numbering scheme.

F. Related Requirements:

1. Section 406121.20 “Process Control System Testing”.
2. Section 406343 “Programmable Logic Controllers”.
3. Section 406650 “Radio Telemetry Equipment”.
4. Section 406663 “Antennas”.
5. Section 406666 “Monopoles and Towers”.
6. Section 406717 “Industrial Enclosures”.
7. Section 406733 “Panel Wiring”.
8. Section 406763 “Control Panel Mounted UPS”.
9. Section 406863 “Configuration of HMI Software”.
10. Section 406866 “Configuration of Controller Software”.
11. Section 407000 “Instrumentation for Process Systems”.
12. Section 407113 “Magnetic Flow Meters”.
13. Section 407276 “Level Switches”.

14. Section 407313 “Pressure and Differential Pressure Gauges”.
15. Section 407326 “Gauge Pressure Transmitters”.
16. Section 407336 “Pressure and Differential Pressure Switches”.
17. Section 407816 “Indicating Lights”.
18. Section 407819 “Switches and Push Buttons”.
19. Section 407856 “Isolators, Intrinsically Safe Barriers, and Surge Suppressors”.
20. Section 407859 "Power Supplies”.

1.3 DEFINITIONS

A. Process Control System Supplier (PCSS): The entity responsible for providing all materials, equipment, labor, and services required to achieve fully integrated and operational control system.

B. Applications Engineering System Supplier (AESS): The entity who provides all programming, configuration, and related services for the control system equipment provided by the PCSS.

1.4 PREINSTALLATION MEETINGS

A. Conduct project kickoff coordination meeting within two weeks after submitting the Project Plan. The purpose of the meeting is to summarize the PCSS's understanding of the project; discuss any proposed substitutions or alternatives; schedule testing and delivery deadline dates; provide a forum to coordinate hardware and software related issues; and request any additional information required from the Owner. The meeting will last up to 2 hours.

B. Hold the meeting at the Owner's designated location and include attendance by the Owner, the Engineer, the Contractor, the PCSS's Project Engineer, and the AESS Project Engineer, if applicable. Related Specification Sections may require additional meetings. Prepare and distribute an agenda for this meeting a minimum of one week before the scheduled meeting date. Schedule the meeting for a minimum of one week before the requested meeting date.

1.5 ACTION SUBMITTALS

A. Qualifications Submittal:

1. For non-listed PCSS’, submit, within 30 calendar days after Notice to Proceed, detailed information on staff and organization to indicate compliance with the Quality Assurance requirements of this Section. The Qualifications submittal is required to be submitted and approved before any further submittals will be accepted. Failure to meet the minimum requirements is grounds for rejection as a PCSS. The Qualifications Submittal to contain the following:

    a. Copies of ISA CCST Level 1 certificates for all field technicians or resumes demonstrating field experience.
    b. Notarized statement from the firm's financial institution demonstrating ability for the firm to meet the obligations necessary for the performance of the work.
    c. Copy of UL-508A certificate for panel fabrication facilities.

d. Project references for water or wastewater projects as defined in the "Quality Assurance" paragraphs.
e. Documentation to demonstrate the ability to complete this project including resumes of key staff, financial capacities, details on engineering, design, fabrication, and field service capacity, and location of staff responsible for responding to the site within four hours to resolve startup issues.

B. Project Plan, Deviation List, and Schedule Submittal:

1. Submit, within 45 calendar days after Notice to Proceed, a Project Plan. Submit for approval the Project Plan before further submittals are accepted. The Project Plan to contain the following:

a. Overview of the proposed control system describing the understanding of the project work, a preliminary system architecture drawing, interfaces to other systems, schedule, startup, and coordination. Include a general discussion of startup, approach to testing and training, and other tasks as required by these specifications.
b. Preliminary list of HMI software, PLC software, PLC hardware, and radio telemetry hardware, including version numbers, solely to determine compliance with the requirements of the Contract Documents prior to beginning development of system programming. The review and approval of software and hardware systems as part of this Project Plan stage does not relieve the PCSS of meeting all the functional and performance requirements of the system as specified herein. Substitution of manufacturer or model of these systems after the submittal is approved is not allowed without Engineer's approval.
c. Project personnel and organization including the PCSS project manager, project engineer, and lead project technicians. Include resumes of each of these individuals and specify in writing their commitment to this project. These do not need to be submitted again if already submitted in Qualification submittal.
d. Exceptions to the Specifications or Drawings in a Deviation List consisting of a paragraph-by-paragraph review of the Specifications indicating acceptance or any proposed deviations, the reason for exception, the exact nature of the exception and the proposed substitution so that an evaluation may be made by Engineer. Specifically state if no exceptions are taken to the specifications or drawings. If there is no statement by the PCSS, then it is acknowledged that no exceptions are taken.

2. PCSS is required to prepare a project schedule in Gantt chart format clearly showing task linkages for all tasks and identifying critical path elements. PCSS schedule is based on the General Contractor schedule and meets all field installation, testing, and start-up milestones in that schedule.

C. Field Instruments Submittal:

1. Refer to Section 407000 for submittal requirements.

D. Radio Telemetry Submittals:

1. Refer to Section 406650, 406663, and 406666 for submittal requirements.

E. Software Submittals:

1. Refer to Sections 406863 and 406866 for submittal requirements.

F. Hardware Packages Submittal:

1. Refer to the sections below for equipment required as part of the Hardware and Software Packages submittal:

   a. Section 406343 “Programmable Logic Controllers”.
   b. Section 406717 “Industrial Enclosures”.
   c. Section 406733 “Panel Wiring”.
   d. Section 406763 “Control Panel Mounted UPS”.
   e. Section 407816 “Indicating Lights”.
   f. Section 407819 “Switches and Push Buttons”.
   g. Section 407856 “Isolators, Intrinsically Safe Barriers, and Surge Suppressors”.
   h. Section 407859 "Power Supplies”.

2. For each hardware component specified in the sections above, submit cover page that lists date, specification number, product name, manufacturer, model number, location(s), and power required. Preferred format for the cover page is ISA-TR20.00.01-2007, general data sheet; however, other formats will be acceptable provided they contain all required information.

G. Panel Layout Drawings and Wiring Diagrams Submittal:

1. Panel Layout Drawings: Submit Drawings for all panels specified. Draw to scale panel assembly and elevation drawings and detail all equipment in or on the panel.

   a. Clearly indicate a legend sheet with all symbols used on drawings and with voltage, color and size of each wire and in accordance with requirements of Section 406733 “Panel Wiring.”
   b. Interior and exterior panel elevation drawings to scale.
   c. Nameplate schedule.
   d. Conduit access locations.
   e. Panel construction details.
   f. Cabinet assembly and layout drawings to scale. Include a bill of material on the assembly drawing with each panel component clearly defined. Cross-reference the bill of material to the assembly drawing so that a non-technical person can readily identify all components of the assembly by manufacturer and model number.
   g. Fabrication and painting specifications including color (or color samples).
   h. Construction details, NEMA ratings, intrinsically safe barrier information, gas sealing recommendations, purging system details, etc. for panels located in hazardous locations or interfacing to equipment located in hazardous areas.
   i. For every control panel, heating and cooling calculations for each panel supplied indicating conformance with cooling requirements of the supplied equipment and environmental conditions. Include on calculations the recommended type of equipment required for both heating and cooling.
   j. Submit evidence that all control panels are constructed in conformance with UL 508A and bear the UL seal confirming the construction. Specify if UL compliance and seal application accomplished at the fabrication location or by field inspection

by UL inspectors. Costs associated with obtaining the UL seal and any inspections are be borne by Contractor.

2. Wiring Diagrams Submittal:

a. PCSS to provide complete wiring diagrams showing all wiring connections in the I/O system where direct hardwired interfaces exist between the PCSS control panels and vendor provided control panels furnished under other Divisions. by This includes but is not limited to terminal block numbering, relay contact information, instruments, equipment, and control panel names. Include drawings in Final O&M submittal. Leaving this information blank on Final Documentation drawings is not acceptable.

b. Panel wiring diagrams depicting wiring within and on the panel as well as connections to external devices. Panel wiring diagrams include power and signal connections, UPS and normal power sources, all panel ancillary equipment, protective devices, wiring and wire numbers, and terminal blocks and numbering. Field device wiring includes the device ISA-tag and unique numeric identifier. Diagrams identify all device terminal points that the system connects to, including terminal points where I/O wiring lands on equipment not supplied by the PCSS. Wiring labeling used on the drawings match that shown on the Contract Documents or as developed by the PCSS and approved by the Engineer. I/O wiring numbered with rack number, slot number, and point number. Two-wire and four-wire equipment to be clearly identified, and power sources noted. Submit final wire numbering scheme.

3. Provide all panel drawings in 11-inch x 17-inch size.

H. Testing Plan Submittals:

1. Refer to Section 406121.20 “Process Control System Testing” for specific testing submittal requirements.

1.6 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For all PCSS supplied hardware to include in operation and maintenance manuals.

1. Include the following information on the operations and maintenance manuals:

a. Table of Contents:

1) Provide a Table of Contents for the entire manual with the specific contents of each volume clearly listed. Include the complete Table of Contents in each volume.

b. Complete, as-built versions of all submittals provided under this and related Sections.

c. Equipment Operations and Maintenance Information: Provide either new documentation written specifically for this project or modified standard vendor documentation to the vendor O&M documentation for each device furnished.

Indicate with arrows or circles all portions that apply to all standard vendor documentation furnished. Neatly line out or cross out all portions that do not apply. Remove groups of pages or sections that do not apply to the specific model supplied.

d. Provide the record documentation of the completed test forms and calibration/configuration forms with sign-offs as specified in Section 406121.20 “Process Control System Testing.”

B. Electronic O&M Information:

1. In addition to the hard copy of O&M data, provide an electronic version of all as-built submittals, all equipment manuals and data sheets, and backups of as-built program and configuration files, on DVD or USB thumb drive.
2. Provide electronic files for all drawings produced. Supply drawings in AutoCAD ".dwg" and PDF formats. Provide drawings using the AutoCAD eTransmit feature to bind external references, pen/line styles, fonts, and the drawing file into individual zip files.

1.7 MAINTENANCE MATERIAL SUBMITTAL

A. Furnish extra materials from the same product run**,** that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Refer to individual specification sections in Division 40 for spare equipment requirements and provide one comprehensive spare parts submittal for project.

B. Pack all spare parts in individual cartons and label with indelible markings clearly indicating component(s) inside. Supply with the required spare parts complete ordering information paperwork including manufacturer's contact information (address and phone number), part name, part number, equipment name and tag number(s) for which the part is to be used (if applicable). Deliver and store the spare parts in a location directed by the Owner or Engineer.

1.8 QUALITY ASSURANCE

A. The Process Control System Supplier (PCSS) to be a “systems integrator” regularly engaged in the design and the installation of instrumentation systems and their associated subsystems as they are applied to the municipal water and wastewater industry. For the purposes of this Specification Section, a “systems integrator” means an organization that complies with the following criteria:

1. Employs personnel on this project who have successfully completed ISA or manufacturer’s training courses on general process instrumentation and configuration and implementation of the specific programmable controllers, computers, and software proposed for this project. Key personnel to hold ISA CCST Level 1 certification or have a minimum of 10 years of verifiable plant startup experience. Key personnel include, as a minimum, the lead field technician.
2. Has successfully completed work of similar or greater complexity on at least three previous projects within the last five years. Successful completion is defined as a finished project completed on time, without any outstanding claims or litigation involving the

PCSS. Potential references for projects where the PCSS's contract was of similar size to this project.

3. Has been actively engaged in the type of work specified in this Section for a minimum of five years.

B. Maintain a permanent, fully staffed and equipped service facility within 200 miles of the project site with full-time employees capable of designing, fabricating, installing, calibrating, and testing the systems specified herein. Respond to on-site problems within 12 hours of notice. Provide an on-site response within four hours of notification starting at two months before scheduled startup to two months after startup completion.

C. Select a PCSS from one of the following:

1. Rocha Controls, Tampa, FL.
2. Or equal.

D. Being listed in this specification does not relieve any potential PCSS from meeting the qualifications specified in this Section.

1.9 FIELD CONDITIONS

A. Environmental Requirements: Refer to Electrical Drawings for specific environmental and hazardous area classifications.

B. Elevation: Design equipment to operate at the project ground elevation.

C. Temperature:

1. Outdoor area equipment to operate between -4 to 122-degrees F (-20 to 50-degrees C) ambient.
2. Equipment in indoor locations operate between 50 to 95-degrees F (10 to 35-degrees C) degrees ambient minimum.
3. Storage temperatures range from 32 to 122-degrees F (0 to 50-degrees C) degrees ambient minimum.
4. Furnish additional cooling or heating if required by the equipment specified herein.
5. Relative Humidity. Air-conditioned area equipment operates between 20 to 95 percent relative, non-condensing humidity. All other equipment operates between 5 to 100 percent relative, condensing humidity.

1.10 WARRANTY

A. Warranty Period: One year from date of Substantial Completion unless noted otherwise in individual specification sections.

PART 2 - PRODUCTS

2.1 GENERAL

A. Electrical Requirements for Control System:

1. Operate equipment on a 60 Hertz alternating current power source at a nominal 120 volts, plus or minus 10 percent, except where specifically noted. Regulators and power supplies required for compliance with the above to be provided between power supply and interconnected instrument loop. Supply constant voltage transformers where equipment requires voltage regulation.
2. With the exception for field device network connected devices, all electronic instrumentation utilize linear transmission signals of isolated 4 to 20 mA DC (milliampere direct current) capable of driving a load up to 750 ohms, unless specified otherwise. However, signals between instruments within the same panel or cabinet may be 1-5 VDC (volts direct current).
3. Outputs of equipment that are not of the standard signals as outlined, have the output immediately raised and/or converted to compatible standard signals for remote transmission. No zero-based signals will be allowed.
4. All switches have double-pole, double-throw (DPDT) contacts rated at a minimum of 600 VA, unless noted otherwise.
5. Switches and/or signals indicating an alarm, failure or upset condition wired in a fail-safe manner. A fail-safe condition is when an open circuit generates an alarm state (i.e. contact opens).
6. Materials and equipment UL approved whenever such approved equipment and materials are available.
7. All equipment furnished designed and constructed so that in the event of power interruption, the systems specified all go through an orderly shutdown with no loss of memory and resume normal operation without manual resetting when power is restored, unless otherwise noted.
8. Surge protection requirements for control system power, signal, and communication lines are specified in Section 407856 “Isolators, Intrinsically Safe Barriers, and Surge Suppressors.”

PART 3 - EXECUTION

3.1 GENERAL INSTALLATION

A. The shield on each process instrumentation cable to be continuous from source to destination and be grounded at only one ground point for each shield.

3.2 STARTUP SERVICE

A. Refer to Section 406121.20 “Process Control System Testing.”

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B. Engage factory-authorized service representative to perform startup service as specified in individual hardware and instrument specification sections.

END OF SECTION 406100

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SECTION 406121.20 - PROCESS CONTROL SYSTEM TESTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes process control system testing, where the Applications Engineering services are performed by Owner.

B. Related Requirements:

1. Section 406100 “Process Control and Enterprise Management Systems General Provisions.”

C. Furnish all labor, materials, equipment, and incidentals required to complete the testing of all devices and systems furnished and installed as detailed on Drawings, and as specified herein.

1.3 DEFINITIONS

A. Process Control System Supplier (PCSS): The entity responsible for providing all materials, equipment, labor, and services required to achieve a fully integrated and operational control system.

B. Applications Engineering System Supplier (AESS): The entity who provides all programming, configuration, and related services for the control system equipment provided by the PCSS.

C. Human Machine Interface (HMI): A software-based user interface with supervisory level control and of machine level equipment.

D. Operator Interface Terminal (OIT): A hardware component of the HMI used for device level control and monitoring.

E. Programmable Logic Controller (PLC): A ruggedized programmable computer used for industrial automation.

F. Input/Output (I/O): Analog or digital field instrument signals to be received and interpreted by a PLC.

G. Uninterruptible Power Supply (UPS): A device capable of providing emergency battery power when the main power source fails.

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1.4 ACTION SUBMITTALS

A. Refer to Section 406100 “Process Control and Enterprise Management Systems General Provisions.”

B. Testing Submittals - Submit, in one submittal, the following testing related documents:

1. Test Forms:

a. Develop and submit project specific I/O Status signoff forms to be used during testing to organize and track each loop's inspection, adjustment, calibration, configuration, and testing status and sign off. Include sign-off forms for each testing phase showing all loops.

1) An example form is provided in the Appendices.
2) Separate forms for factory and field testing can be used, or they can be combined, at the discretion of the PCSS.
3) Submit testing forms prior to start of testing.

2. Testing Procedures:

a. Submit detailed procedures proposed to be followed for each of the tests specified herein.
b. Structure documents in orderly and easy to follow manner to facilitate an efficient and comprehensive test.
c. Indicate in test procedures all pre-testing setup requirements, all required test equipment, and simulation techniques to be used.
d. Structure test procedures in a cause-and-effect manner where the inputs are indicated, and the outputs are recorded.
e. Include in test procedures the demonstration and validation under normal operating conditions and under various failure scenarios as specified in Contract Documents.
f. Do not start testing until all Testing Submittals have been approved.

3. Calibration Forms:

a. For any component or instrument requiring dip switch settings, calibration, or custom configuration, maintain a calibration form in field documenting this information. These forms provide a summary of the actual settings used in the field to allow an Instrument technician to replace the device entirely and configure it to function as it did before.
b. Some examples of required information are:

1) For Discrete Devices: Actual trip points and reset points.
2) For Instruments: Any configuration or calibration settings entered into instrument.
3) For Controllers: Mode settings (PID).
4) For I/O Modules: Dip switch settings, module configuration (if not documented in native programming documentation).

c. Maintain copy of these forms in field during testing and make them available for inspection at any time.
d. For any device that allows a software back-up of configuration files to a laptop, make configuration files available to Engineer/Owner for inspection. Submit as part of Final System Documentation as specified in Section 406100 “Process Control and Enterprise Management Systems General Provisions.”

C. Test Documentation:

1. Upon completion of each required test, document the test by submitting a copy of the signed off Testing Status forms. Testing is not considered complete until the signed-off forms have been submitted and approved. Submittals of other test documentation, including "highlighted" wiring diagrams with field technician notes, are not acceptable substitutes for the formal test documentation.

1.5 CLOSEOUT SUBMITTALS

A. Refer to Section 406100 “Process Control and Enterprise Management System General Provisions.”

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 TESTING - GENERAL

A. Refer to Section 406100 “Process Control and Enterprise Management System General Provisions.”

B. Track results of all testing on project specific status sign-off form or similar document. The PCSS is responsible for maintaining the sheet. Appendix of this Section has an example template for this sheet.

C. Tests the PCSS is required to perform are as follows:

1. Factory Testing:

a. Unwitnessed Factory Test (UFT).
b. Witnessed Factory Test (WFT).

2. Field Testing:

a. Operational Readiness Test (ORT).
b. Functional Demonstration Test (FDT).
c. Site Acceptance Test (SAT).

D. Wherever possible, perform tests using actual process variables, equipment, and data. Where it is not practical to test with real process variables, equipment, and data, provide all special testing materials and equipment required for a suitable means of simulation.

E. PCSS to coordinate all required testing with Contractor, affected Subcontractors, Engineer, and Owner.

F. Engineer reserves the right to test or re-test any functions.

G. Correction of Deficiencies:

1. Correct deficiencies in workmanship and/or items not meeting specified testing requirements to meet specification requirements at no additional cost to Owner.
2. Repeat testing, as specified herein, after correction of deficiencies is made until specified requirements are met. Perform work at no additional cost to Owner.

3.2 FACTORY TESTING - UNWITNESSED FACTORY TEST (UFT)

A. Purpose of UFT is for PCSS to check system prior to Engineer and/or Owner attending factory testing. This type of testing is part of any quality firm's internal QA/QC procedures.

B. Temporary network connections are required to confirm the network configuration. Temporary wiring of primary elements, final control elements, and field-mounted transmitters is not required.

C. Provide a temporary HMI or other method of conducting I/O testing as described herein. Describe this method in the Test Procedures submittal for approval in advance.

D. Hardware to be tested includes all control system devices shown on System Architecture drawings and provided by PCSS.

E. Perform these tests, but not be limited to the following. Address each of these tests in the Test Procedure submittal.

1. All panels and enclosures provided to undergo a thorough inspection to verify integrity of cabinet enclosures, frame structures, paint work and finish, etc. Review panel drawings to ensure they accurately reflect panel layout and wiring.
2. Perform panel wire pull tests to ensure all wiring has been connected with appropriate torque to prevent wires from coming loose. Confirm that all panel circuits match the design drawings.
3. Test UPS to verify UPS switch power correctly while keeping all UPS powered loads online. Perform testing of UPS to determine if they have been sized correctly to maintain specified run time during field testing.
4. Demonstrate total power failure and recovery.
5. Perform a 100 percent I/O point checkout to verify proper operation of input/output points from panel terminations to HMI. At a minimum, I/O checkout consists of four steps.

a. Jumper discrete input signals at field terminal blocks in control panels to verify proper status in HMI.
b. Connect analog input signals to a signal generator at field terminal blocks in control panels to verify proper status in HMI and OIT nodes and verify signals are at zero percent, 50 percent, and 100 percent of full scale.
c. Test discrete output signals by switching equipment to manual control at HMI and OIT nodes and turning the output on or other means to turn the output on. Then verify the output is on by connecting a digital multimeter to measure continuity at terminations, thus verifying command from PLC has properly executed contact closure.
d. Test analog output signals by switching the equipment to manual control at HMI and turning output on or other means to turn the output on. Then verify output by utilizing a digital multimeter to measure current or voltage generated at termination points.

6. Verify all control strategies using simulation or other means to verify logic performs as expected. Verify faults and logical failure conditions for control strategies such instrument failures, equipment failures, loss of communication between HMI Server and PLC, loss of peer-to-peer communication, out of range testing (over and under scale) for analog inputs, and all other strategies specified in control strategy document.
7. For each hardware enclosure, include with inspection, but not be limited to, cabinet enclosures, frame structure, paint work and finish, dimensions, and hardware operability (i.e., fans, door hinges, keylocks, etc.).
8. For each subpanel, include with inspection, but not be limited to, I/O subsystem physical layout, power supply sizing and mounting, cable routing, wire runs across hinges properly installed, fans and blowers unobstructed and mounted to maximize air flow, power conditioning correctly installed, and overall layout and installation of components meets manufacturer's recommendations and standard industry accepted practices.

F. Upon successful completion of UFT, PCSS to submit a record copy of test results as specified in PART 1. As part of this test results submittal, notify Engineer and Owner in writing that system is ready for WFT. No other notice of Factory test will be accepted. Engineer and/or Owner to schedule a test date within 30 days of receipt of this submittal.

3.3 FACTORY TESTING - WITNESSED FACTORY TEST (WFT)

A. Purpose of WFT is to allow Engineer or Owner representatives to witness functionality, performance, and stability of entire hardware and software system as a complete integrated system. WFT to be run by PCSS and conducted at PCSS's facility.

B. Required Documents for Test:

1. Clean set of approved panel drawings and wiring diagrams.
2. Set of Contract Documents - all drawings and specifications.
3. All design-change related documentation.
4. Master copy of the PCSS developed factory testing signoff forms.
5. Testing procedures.

C. Operate the system continuously throughout WFT without failure, except where initiated per established test procedures. Unanticipated failures may, at Owner or Engineer's option, result in overall WFT being deemed unsuccessful. Correct and re-test all deficiencies identified during these tests prior to completing WFT or shipment of panels to jobsite as determined by Owner/Engineer.

D. Perform these tests during the WFT, but not be limited to, the following:

1. A repeat of all tests specified in the UFT.

E. Daily schedule during these tests to be as follows:

1. Morning meeting to review the day's test schedule.
2. Scheduled tests and sign-offs.
3. End of day meeting to review day's test results and to review or revise next day's test schedule.
4. Unstructured testing period by witnesses.

F. Upon successful completion of WFT, PCSS to submit record copy of test results as specified in PART 1.

3.4 FIELD TESTING - OPERATIONAL READINESS TEST (ORT)

A. The purpose of the ORT is to check that process equipment, instrument installation, instrument calibration, instrument configuration, field wiring, control panels, and all other related system components are ready to monitor and control the processes. This test determines if equipment is ready for operation.

B. This test shall take place prior to startup. Prior to starting this test, install relevant process equipment and mechanically test instruments installed, control panels installed, and field wiring complete.

C. For this test, coordinate with the Owner to monitor and operate the RTU.

D. Required Documents for Test:

1. Master copy of the PCSS developed field testing sign-off forms.
2. Testing procedures.
3. Calibration forms.

E. These inspections, calibrations, and tests do not require witnessing by the Engineer. However, the Engineer may review and spot-check testing process periodically. All deficiencies found shall be corrected by PCSS prior to startup.

F. Perform the following tests as part of ORT:

1. Instrument calibration, configuration, and set-up.
2. Input/Output (I/O) Testing to HMI.
3. Testing of control strategies.

G. Instrument calibration, configuration, and set-up:

1. Calibrate, configure, and set-up all components and instruments to perform specified functions, using the forms submitted and approved in PART 1.

H. I/O Testing:

1. The purpose of I/O testing is to check that process equipment, instrument installation, calibration, configuration, field wiring, and control panels are set-up correctly to monitor and control the processes. This test is commonly referred to as a "loop test" or an I/O checkout. Use the forms submitted and approved in PART 1.
2. PCSS in conjunction with Contractor and Owner shall test signals under process conditions. Preferred test method will always be to execute test wherever possible to end elements. For example, preferred test will prove valve open/close limit switches by operating valve, not by installing a jumper on limit switch contacts. However, if equipment or process is not available to test a signal over its entire calibrated range, PCSS may test using a simulation method and make a note on the sign-off form.
3. Perform the following I/O tests:

a. Discrete Input: At device or instrument, change signal condition from inactive to active state. Observe results on all indicators within loop such as HMI screens, OIT screens, pilot lights, horns, beacons, etc.
b. Analog Input: Test analog signal over entire engineering range at various intervals including 0, 50 percent, and 100 percent as well as on increasing and decreasing range. Observe results on all indicators within loop such as HMI screens, OIT screens, recorders, digital indicators, etc.
c. Test discrete output signals by switching equipment to manual control at the HMI and OIT nodes and turning output on or using other means to turn output on. Then verify equipment responds accordingly.
d. Test analog output signals by switching equipment to manual control at HMI and OIT nodes and turning output on or other means to turn output on. Then verify equipment responds accordingly.

I. Perform a total power failure and recovery, and a total communication failure and recovery.

J. Test UPS to verify UPS switch power correctly while keeping all UPS powered loads online. Also, test sizing of UPS by switching off-line power to UPS and verify if they maintain specified run time.

K. Test internal control panel temperature under full running conditions to ensure proper cooling/ventilation is being provided.

L. Upon successful completion of ORT, submit record copy of test results as specified in PART 1.

3.5 FIELD TESTING - FUNCTIONAL DEMONSTRATION TEST (FDT)

A. After facility is started-up and running treatment process in automatic control to extent possible, perform a Functional Demonstration Test. Purpose of FDT is to allow Engineer or Owner

representatives to witness actual functionality, performance, and stability of system while connected to process equipment.

B. Required Documents for Test:

1. Set of panel drawings and wiring diagrams from ORT with corrections noted.
2. Set of Contract Documents - all drawings and specifications.
3. All design-change related documentation.
4. Signed-off master copy of the PCSS developed field testing signoff forms.
5. Testing procedures.
6. Copy of completed calibration forms.
7. One copy of all O & M Manuals for PCSS supplied equipment.

C. To extent possible, repeat testing performed during ORT.

D. Document punch list items and resolutions noted during test on Punch list/Resolution form. In event of rejection of any part or function test procedure, PCSS to perform repairs, replacement, and/or retest within 10 days.

E. Upon successful completion of the FDT, PCSS to submit a record copy of test results as specified in PART 1.

3.6 FIELD TESTING - SITE ACCEPTANCE TEST (SAT)

A. After completion of FDT, and system is started-up and running treatment process in automatic control to extent possible, perform a test on the system.

B. While this test is proceeding, Engineer and Owner have full use of system. Only allow plant operating personnel to operate equipment associated with live plant processes. Plant operations remain the responsibility of Owner and decision of plant operators regarding plant operations are final.

C. During this test, PCSS personnel to be present as required to address any potential issues that would impact system operation. PCSS is expected to provide personnel for this test who have an intimate knowledge of hardware and software of system. When PCSS personnel are not on-site, PCSS to provide cell phone/pager numbers that Owner personnel can use to ensure that support staff is available by phone and/or on-site within four hours of a request by operations staff.

D. PCSS to analyze and correct any malfunctions during test. In event of rejection of any part or function, PCSS to perform repairs or replacement within 5 days.

E. Throughout duration of SAT, do not make software or hardware modifications to the system without prior approval from Owner or Engineer.

END OF SECTION 406121.20

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APPENDIX **40 61 21**-A: EXAMPLE INPUT/OUTPUT (I/O) STATUS SIGN OFF FORM

An example template for I/O Status signoff form to be used for documenting testing results to Owner is attached. PCSS is required, prior to testing, to create a project specific I/O Status signoff form based on attached template or approved equal. PCSS may obtain an electronic copy of template from Engineer or develop it on their own.

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[Project Name] Appendix A - Input/Output (I/O) Status Sign-Off Form

All Sections below are required to be filled out by PCSS as part of Field Testing.

Instrument Alarm Setpoint - Setpoint for any alarms set by PCSS

Wiring Complete - Signal wired from field device to PLC

I/O Tested - Signal tested from field device to SCADA HMI

PLC	Signal Tag	Description	Range or Active State when closed	P&ID	Signal	Rack	Slot	Channel	Instrument Alarm Setpoint	Calibrate, config., and Wiring complete	Date	PCSS I/O testing	Date	I/O Testing to the HMI	Date	Notes
PLC-SC	LIT-4000-1	Secondary Clarifier No. 1 Sludge Level	0-10 ft	8	AI	2	1	0								
PLC-SC	LIT-4010-3	Secondary Clarifier No. 3 Sludge Level	0-10 ft	8	AI	2	1	1								
PLC-SC	SI-4100-1	RAS Pump No. 1 Speed Feedback	0-100%	14	AI	2	1	2								
PLC-SC	SI-4100-4	RAS Pump No. 4 Speed Feedback	0-100%	15	AI	2	1	3								
PLC-SC	FIT-4102-1	RAS Flow Pumps 1-3	0-1900 GPM	14	AI	2	1	4								
PLC-SC	SI-4110-1	WAS Pump No. 1 Speed Feedback	0-100%	14	AI	2	1	5								
PLC-SC	N/A	Spare Slot	N/A	N/A	Spare	2	5	N/A								
PLC-SC	SC-4100-1	RAS Pump No. 1 Speed Setpoint	0-100%	14	AO	2	7	0								
PLC-SC	SC-4100-2	RAS Pump No. 2 Speed Setpoint	0-100%	14	AO	2	7	1								
PLC-SC	SC-4100-3	RAS Pump No. 3 Speed Setpoint	0-100%	14	AO	2	7	2								
PLC-SC	SC-4110-1	WAS Pump No. 1 Speed Setpoint	0-100%	14	AO	2	7	3								
PLC-SC	Spare	Spare	N/A	N/A	AO	2	7	4								
PLC-SC	Spare	Spare	N/A	N/A	AO	2	7	5								
PLC-SC	TSH-4000-1	Secondary Clarifier No. 1 High Temp	Normal	8	DI	3	1	0								
PLC-SC	XA-4000-1	Secondary Clarifier No. 1 Motor Overload	Normal	8	DI	3	1	1								
PLC-SC	WAH-4000-1	Secondary Clarifier No. 1 High Torque	Normal	8	DI	3	1	2								
PLC-SC	WAHH-4000-1	Secondary Clarifier No. 1 High High Torque	Normal	8	DI	3	1	3								
PLC-SC	YRI-4000-1	Secondary Clarifier No. 1 On/Off	On	8	DI	3	1	4								
PLC-SC	YCI-4000-1	Secondary Clarifier No. 1 In Remote	In Remote	8	DI	3	1	5								
PLC-SC	YFI-4100-1	RAS Pump No. 1 VFD Fault	Normal	14	DI	3	1	6								
PLC-SC	FAL-4100-1	RAS Pump No. 1 Low Flow	Normal	14	DI	3	1	7	50 GPM	RJM	12/18/2011	JAS	12/22/2011	MIC	12/29/2011	Example completed line
PLC-SC	Spare	Spare	Normal	14	DI	3	1	8								
PLC-SC	YRI-4100-1	RAS Pump No. 1 Running	Running	14	DI	3	1	9								
PLC-SC	YCI-4100-1	RAS Pump No. 1 In Remote	In Remote	14	DI	3	1	10								
PLC-SC	YFI-4110-1	WAS Pump No. 1 VFD Fault	Normal	14	DI	3	1	11								
PLC-SC	FAL-4110-1	WAS Pump No. 1 Low Flow	Normal	14	DI	3	1	12								
PLC-SC	Spare	Spare	Normal	14	DI	3	1	13								
PLC-SC	YRI-4110-1	WAS Pump No. 1 Running	Running	14	DI	3	1	14								
PLC-SC	YCI-4110-1	WAS Pump No. 1 In Remote	In Remote	14	DI	3	1	15								
PLC-SC	HSS-4000-2	Secondary Clarifier No. 2 Start Command	Start	8	DO	4	6	0								
PLC-SC	Spare	Spare	N/A	N/A	DO	4	6	1								
PLC-SC	HSS-4100-2	RAS Pump No. 2 Start Command	Start	14	DO	4	6	2								
PLC-SC	HSS-7000-2	Sludge Holding Tank Blower No. 2 Start Command	Start	17	DO	4	6	3								
PLC-SC	HSS-4100-5	RAS Pump No. 5 Start Command	Start	15	DO	4	6	4								
PLC-SC	Spare	Spare	N/A	N/A	DO	4	6	5								
PLC-SC	HSS-4105-1	Secondary Scum Pump No. 2 Start/Stop	Start	15	DO	4	6	6								
PLC-SC	HSS-4110-2	WAS Pump No. 2 Start/Stop Command	Start	15	DO	4	6	7								
PLC-SC	7160-FQI-1	Sludge Loadout LCP Pumping Indicator	Pumping	17	DO	4	6	8								
PLC-SC	Spare	Spare	N/A	N/A	DO	4	6	9								
PLC-SC	HSS-7115-2	Sludge Holding Tank Mixer No. 2 Start	Start	17	DO	4	6	10								
PLC-SC	Spare	Spare	N/A	N/A	DO	4	6	11								
PLC-SC	HSO-7117-2	Sludge Holding Tank Discharge Valve No. 2 Open CMD	Open	17	DO	4	6	12								
PLC-SC	HSC-7117-2	Sludge Holding Tank Discharge Valve No. 2 Close CMD	Close	17	DO	4	6	13								
PLC-SC	HSS-7120-2	TS Transfer Pump No. 2 Start Command	Start	17	DO	4	6	14								
PLC-SC	Spare	Spare	N/A	N/A	DO	4	6	15								

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SECTION 406343 - PROGRAMMABLE LOGIC CONTROLLERS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes programmable logic controllers<Insert description of any other essential item included in the Section.

B. Related Requirements:

1. Section 406100 “Process Control and Enterprise Management Systems General Provisions.”

1.3 DEFINITIONS

A. Analog Input (AI): An electrical signal (1-5 Volts DC or 4-20 milliamps, for example) to be interpreted by a PLC.

B. Analog Output (AO): An electrical signal (1-5 Volts DC or 4-20 milliamps, for example) sent from a PLC to a field device.

C. Digital/Discrete Input (DI): A binary signal (0 or 1) to be interpreted by a PLC.

D. Digital/Discrete Output (DO): A binary signal (0 or 1) sent from a PLC to a field device.

E. Input/Output (I/O): Analog or digital field instrument signals to be received and interpreted by a PLC.

F. Human Machine Interface (HMI): A software-based user interface with supervisory level control and of machine level equipment.

G. Operator Interface Terminal (OIT): A hardware component of the HMI used for device level control and monitoring.

H. Peer to Peer: Communication between two or more devices, typically PLC’s, in which each device can control the communication exchange.

I. Programmable Logic Controller (PLC): A ruggedized programmable computer used for industrial automation.

J. Remote I/O (RIO): I/O that is located remotely from the processor. Remote I/O can communicate over a variety of communication protocol and can use standard rack based I/O, or specialized Remote I/O hardware referred to as Distributed I/O.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Refer to Section 406100 “Process Control and Enterprise Management System General Provisions.”

B. Shop Drawings:

1. Refer to Section 406100 “Process Control and Enterprise Management Systems General Provisions.”

1.5 INFORMATIONAL SUBMITTALS

A. Refer to Section 406100 “Process Control and Enterprise Management Systems General Provisions.”

1.6 CLOSEOUT SUBMITTALS

A. Refer to Section 406100 “Process Control and Enterprise Management System General Provisions.”

1.7 QUALITY ASSURANCE

A. Provide components compatible with functions required to form complete working system.

1.8 FIELD CONDITIONS

A. Refer to Section 406100 “Process Control and Enterprise Management Systems General Provisions.”

1.9 WARRANTY

A. Refer to Section 406100 “Process Control and Enterprise Management Systems General Provisions.”

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PART 2 - PRODUCTS

2.1 SYSTEM DESCRIPTION

A. Provide all PLCs from a single manufacturer as follows. If the PLC manufacturer has authorized third party vendors to provide modules that are compatible with their platforms, then products manufactured by these authorized third-party vendors will be acceptable.

1. Rockwell Automation Allen Bradley – Micro800/820 series.

B. Provide components from the following list. Substitutions will not be permitted without written permission by the Engineer.

1. Micro820 Controller: 2080-LC20-20QWB.
2. Micro800 microSD card: 2080-SD-2GB.

C. Furnish one (1) license of Connected Components Workbench, Developer Edition software, to be turned over to Owner at project completion.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Comply with NECA 1.

B. Wiring within Enclosures: Bundle, lace, and train conductors to terminal points with no excess and without exceeding manufacturer's limitations on bending radii.

END OF SECTION 406343

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SECTION 406650 - RADIO TELEMETRY EQUIPMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes radio telemetry equipment.

B. Related Requirements:

1. Section 406100 “Process Control and Enterprise Management Systems General Provision.”
2. Section 406653 “Antennas.”
3. Section 407856 “Isolators, Intrinsically Safe Barriers, and Surge Suppressors.”

C. Obtain required Construction permits for equipment installation.

D. Meet all applicable federal (FCC, etc.), state, and local codes and regulations.

1.3 DEFINITIONS

A. AGL: Above ground level.

B. RCDD: Registered Communications Distribution Designer.

C. Transmitter (Tx) and Receiver (Rx): An electrical device that either produces or receives radio wave with an antenna.

1.4 ACTION SUBMITTALS

A. Provide shop drawings and product data showing materials of construction and details of installation for:

1. Data sheets and catalog literature for hardware (radios and accessories).
2. Physical dimension drawings.
3. Antenna tower details and structural calculations.
4. Installation and interconnection/wiring diagrams depicting the proposed installation of the equipment, in conformance to the requirements specified on the Plans. Detail these drawings to the extent that they may be modified after installation to serve as the "AS-BUILT" drawings.

a. A complete telemetry system block diagram(s) showing in schematic form, the interconnections between major hardware components. Reference all interconnecting cabling requirements for digital components of the system including any data communication links.
b. Equipment specification sheets that fully describe the device, the intended function, how it operates and its physical environmental and performance characteristics. As a minimum the specification sheets include the following:

1) Dimension, rigid clearances.
2) Mounting or installation details.
3) Connection.
4) Electrical power requirements.
5) Materials of construction.
6) Environmental characteristics.
7) Performance characteristics.

c. Submit all planning information, site preparation instructions, grounding and bonding procedures, cabling diagrams, plug identifications, safety precautions or guards, and equipment layouts to enable the Supplier to proceed with the detailed site preparation for the equipment.

B. Theoretical Radio Path Study:

1. Within 30 days after Notice to Proceed, perform a computer-based radio coverage study to calculate anticipated fade margin. Include the following in the propagation model:

a. Longitude, latitude, and elevation of transmitter (Tx) and receiver (Rx) antennas.
b. Power (dBm) and antenna gains (dBi) of the system.
c. Receiver threshold level (dBm).
d. System loss (dB) due to Tx/Rx line and connectors losses, and path losses including free-space, diffraction, foliage, and atmospheric absorption.
e. Calculated and manufacturer recommended fade margins.

2. Path Parameters:

a. The radio path shall be between the Seminole Lift Station project site and the Mourning Dove WTP, 2836 Garden St, Titusville, FL 32796.
b. Coordinate with the Owner for details about the Mourning Dove WTP side of the path.
c. It is intended that the Seminole Lift Station antenna be mounted at the minimum height possible, as low as 10 feet AGL, while maintaining a required minimum fade margin of 20dB.

C. Field Radio Path Survey:

1. Within 30 days after the approval of the Theoretical Radio Path Study submittal, perform a field radio path survey to confirm its results, and to ensure minimum signal strength requirements for each communication link. Submit the results of the radio path analysis to the Engineer for review.

2. Make changes as needed to the radio system to provide a system which can demonstrate an acceptable fade margin (greater than 20dB above Rx threshold) on all radio paths in both directions. If a suitable radio path is not available, provide repeater radios in the network, with the quantity and location of the repeater sites determined in the field.

1.5 INFORMATIONAL SUBMITTALS

A. Refer to Section 406100 “Process Control and Enterprise Management Systems General Provisions” for any PCSS requirements regarding informational submittals for instruments.

1.6 CLOSEOUT SUBMITTALS

A. Refer to Section 406100 “Process Control and Enterprise Management System General Provision”.

B. Software and Firmware Operational Documentation:

1. Software operating and upgrade manuals.
2. Program Software Backup: On magnetic media or compact disk, complete with data files.
3. Device address list.
4. Printout of software application and graphic screens.

1.7 MAINTENANCE MATERIAL SUBMITTALS

A. None Required.

1.8 QUALITY ASSURANCE

A. Refer to Section 406100 “Process Control and Enterprise Management System General Provision”.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Refer to Section 406100 “Process Control and Enterprise Management Systems General Provisions.”

1.10 FIELD CONDITIONS

A. Refer to Section 406100 “Process Control and Enterprise Management Systems General Provisions.”

1.11 WARRANTY

A. Refer to Section 406100 “Process Control and Enterprise Management Systems General Provisions.”

PART 2 - PRODUCTS

2.1 SPREAD SPECTRUM RADIOS (900 MHZ)

A. Manufacturers:

1. Manufacturers and their products are subject to compliance with requirements. Provide the following:

a. GE MDS Orbit ECR 900.
b. Substitutions: Not Permitted.

B. Type:

1. Frequency Hopping Spread Spectrum (FHSS) radio utilizing 902 – 928 MHz ISM band.

C. Function/Performance:

1. Modulation: Digital, Continuous Phase Frequency Shift Keying (CPFSK).
2. Throughput: 115.2 kbps capacity. Configurable between 1.2 to 115 kbps asynchronous.
3. RF Output Power: 0.1 to 1 Watt. Size antennas to optimize transmission output to 1W.
4. Receiver Sensitivity: -105 dBm at 1x10-6 Bit Error Rate.
5. Error Detection: 16-bit CRC (resend on error).
6. Communications Interface: 1 Ethernet port; 1 Serial (RS232/485) port; 1 USB port for maintenance access.

D. Physical and Environmental:

1. Antenna Connector: TNC Female.
2. Operating Temperature: -40 to 158 degrees F (-40 to 70 degrees C).
3. Power Requirements: 6 to 30 VDC.
4. Humidity: < 95 percent RH (Non-Condensing).

E. Required Accessories:

1. FCC: Part 15 Approved.
2. Surge Protection in accordance with Section 407856 “Isolations, Intrinsically Safe Barriers, and Surge Suppressors.”
3. Antennas in accordance with Section 406663 “Antennas.”

2.2 TRANSMISSION CABLE AND ACCESSORIES

A. Manufacturers:

1. Manufacturers and their products are subject to compliance with requirements. Provide one of the following:

a. CommScope LDF4-50A.

b. Polyphaser.
c. Times Microwave LMR-600.
d. Substitutions: Or equal.

B. Type:

1. Low-loss foam dielectric coaxial cable.

C. Function/Performance:

1. Cable Impedance: 50 ohms plus/minus 1 ohm.
2. Capacitance: 23.4 pF/ft.
3. Dielectric Constant: 1.32.

D. Physical:

1. Copper-clad aluminum wire.
2. Jacket material: polyethylene.
3. Dielectric: foam polyethylene.
4. Outer conductor: corrugated copper or aluminum tape.
5. Nominal diameter: 1/2 inch.
6. Operating Temperature: -40 degrees F (-40 degrees C) to 185 degrees F (85 degrees C).
7. Connectors: Type N, terminated at both ends of the transmission cable.

E. Required Accessories:

1. Wrap outdoor coaxial connectors with two layers of Scotch Super 88 UV resistant tape, and then coated with two layers of Scotch-Kote.
2. Provide two (2) coaxial cable grounding kits for each transmission cable.
3. Provide one 3-foot section of “super flexible” jumper cable with type N connectors to connect between the radio and the transmission cable.
4. Provide coaxial cable hanger kits and clamping hardware. Anchor antenna cable in three-foot intervals on the antenna mast/tower.
5. Provide lightning protectors between transmission cable and coaxial jumper cable. Refer to Section 407856 “Isolators, Intrinsically Safe Barriers, and Surge Suppressors” for lightning protector requirements.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install radio telemetry system as shown on Drawings and in accordance with manufacturer’s instructions and approved shop drawings.

B. Engineer/Owner to approve exact installation locations during construction. Provide all labor and materials necessary to complete the work in an approved manner.

C. Execute all work in accordance with codes and local rulings. Should any work be performed contrary to said rulings, ordinances and regulations, the system supplier bears full responsibility for such violations and assume all costs arising there from.

D. Comply with NECA 1.

E. Wiring Method: Conceal conductors and cables in accessible ceilings, walls, and floors where possible.

F. Wiring within Enclosures: Bundle, lace, and train conductors to terminal points with no excess and without exceeding manufacturer's limitations on bending radii.

3.2 STARTUP SERVICE

A. Perform startup service.

1. Complete installation and startup checks according to manufacturer's written instructions.

3.3 ADJUSTING

A. Position directional antennas for maximum received signal strength.

B. Adjust transmitter power if needed to comply with FCC rules and regulations before acceptance testing.

END OF SECTION 406650

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SECTION 406663 - ANTENNAS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes antennas for radio telemetry.

B. Related Requirements:

1. Section 406100 “Process Control and Enterprise Management Systems General Provision.”
2. Section 406650 “Radio Telemetry Equipment.”
3. Section 407856 “Isolators, Intrinsically Safe Barriers, and Surge Suppressors.”

C. Obtain required Construction permits for equipment installation.

D. Meet all applicable federal (FCC, etc.), state, and local codes and regulations.

1.3 DEFINITIONS

A. Citizen Band Radio Service (CBRS): Frequency band of 3550-3700 MHz (3.5 GHz band) reserved for private two-way, short-distance communication.

B. Voltage Standing Wave Ratio (VSWR): The measure of reflected power on a transmission line, expressed as a ratio of reflected voltage (V_{max}) to ideal voltage (V_{min}). An ideal system will have 100 percent energy transmitted, resulting in a VSWR of 1.0, or 1:1.

C. Yagi-Uda antenna (YAGI): A directional antenna consisting of parallel arrays of similar elements, typically half-wave dipoles.

1.4 ACTION SUBMITTALS

A. Provide shop drawings and product data showing materials of construction and details of installation for:

1. Data sheets and catalog literature for hardware (radios and accessories).
2. Physical dimension drawings.
3. Antenna tower details and structural calculations.
4. Installation and interconnection/wiring diagrams depicting the proposed installation of the equipment, in conformance to the requirements specified on the Plans. Detail these

drawings to the extent that they may be modified after installation to serve as the "AS-BUILT" drawings.

a. A complete telemetry system block diagram(s) showing in schematic form, the interconnections between major hardware components. Reference all interconnecting cabling requirements for digital components of the system including any data communication links.
b. Equipment specification sheets that fully describe the device, the intended function, how it operates and its physical environmental and performance characteristics. As a minimum the specification sheets include the following:

    1) Dimension, rigid clearances.
    2) Mounting or installation details.
    3) Connection.
    4) Electrical power requirements.
    5) Materials of construction.
    6) Environmental characteristics.
    7) Performance characteristics.

c. Submit all planning information, site preparation instructions, grounding and bonding procedures, cabling diagrams, plug identifications, safety precautions or guards, and equipment layouts to enable the Supplier to proceed with the detailed site preparation for the equipment.

1.5 INFORMATIONAL SUBMITTALS

A. Refer to Section 406100 “Process Control and Enterprise Management Systems General Provisions” for any PCSS requirements regarding informational submittals for instruments.

1.6 CLOSEOUT SUBMITTALS

A. Refer to Section 406100 “Process Control and Enterprise Management System General Provisions.”

1.7 MAINTENANCE MATERIAL SUBMITTALS

A. None Required.

1.8 QUALITY ASSURANCE

A. Refer to Section 406100 “Process Control and Enterprise Management System General Provisions.”

1.9 DELIVERY, STORAGE, AND HANDLING

A. Refer to Section 406100 “Process Control and Enterprise Management System General Provisions.”

1.10 FIELD CONDITIONS

A. Refer to Section 406100 “Process Control and Enterprise Management System General Provisions.”

1.11 WARRANTY

A. Refer to Section 406100 “Process Control and Enterprise Management Systems General Provisions”.

PART 2 - PRODUCTS

2.1 YAGI DIRECTIONAL ANTENNAS (900 MHz)

A. Manufacturers

1. Manufacturers and their products are subject to compliance with requirements. Provide one of the following:

a. Laird Y Series.
b. L-Com 900 MHz Y Series.
c. PCTEL Maxrad.
d. Substitutions: Or equal.

B. Type:

1. 902-928 MHz yagi directional antenna.
2. Seamless boom with 3 to 6 parallel detector elements.

C. Function/Performance:

1. Gain: 8 dBi or greater, as required for acceptable performance. Refer to radio survey for requirements for antenna gain and elevation.
2. Max power input: 150 W (51.7 dBm).
3. Impedence: 50 Ohms.
4. Horizontal Beamwidth: 52 to 54 degrees.
5. Vertical Beamwidth: 45 to 48 degrees.
6. VSWR: < 1.5:1.
7. Lightning protection: DC ground.
8. Operating Temperature: -40 to 185 degrees F (-40 to 85 degrees C).
9. Rated Wind Speed: 135 mph.

D. Physical:

1. Construction: Fully welded, black or gold anodized.
2. Connector: Female type N.
3. Boom Diameter: 3/4-inch to 1-inch.

4. Boom Material: Heat treated 6061-T6 Aluminum.
5. Element Diameter: 1/8-inch to 3/8-inch.
6. Element Material: Heat treated 6061-T6 Aluminum.
7. Gold anodized or stainless steel mounting plate.
8. RoHS compliant.

E. Required Accessories:

1. Provide lightning protectors between transmission cable and coaxial jumper cable. Refer to Section 407856 “Isolators, Intrinsically Safe Barriers, and Surge Suppressors” for lightning protector requirements.
2. Provide mounting brackets and hardware suitable for the installation location shown on the drawings and as recommended by the antenna manufacturer.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Comply with NECA 1.

B. Wiring Method: Conceal conductors and cables in accessible ceilings, walls, and floors where possible.

C. Wiring within Enclosures: Bundle, lace, and train conductors to terminal points with no excess and without exceeding manufacturer's limitations on bending radii.

3.2 CONNECTIONS

A. Refer to Section 260526 “Grounding and Bonding for Electrical Systems.”

3.3 STARTUP SERVICE

A. Perform startup service.

1. Complete installation and startup check according to manufacturer's written instructions.

END OF SECTION 406663

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SECTION 406666 – MONOPOLES AND TOWERS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes monopoles and towers for radio telemetry.

B. Related Requirements:

1. Section 406100 “Process Control and Enterprise Management Systems General Provision.”
2. Section 406650 “Radio Telemetry Equipment.”
3. Section 406663 “Antennas.”

C. Obtain required Construction permits for equipment installation.

D. Meet all applicable federal (FCC, FAA, etc.), state, and local codes and regulations.

1.3 ACTION SUBMITTALS

A. Provide shop drawings and product data showing materials of construction and details of installation for:

1. Data sheets and catalog literature for hardware (radios and accessories).
2. Physical dimension drawings.
3. Antenna tower details and structural calculations. Submit structural calculations for the antenna foundation signed and sealed by a Registered Structural Professional Engineer in the state where it will be installed for approval.
4. Installation and interconnection/wiring diagrams depicting the proposed installation of the equipment, in conformance to the requirements specified on the Plans. Detail these drawings to the extent that they may be modified after installation to serve as the “AS-BUILT” drawings.

    a. A complete telemetry system block diagram(s) showing in schematic form, the interconnections between major hardware components. Reference all interconnecting cabling requirements for digital components of the system including any data communication links.
    b. Equipment specification sheets that fully describe the device, the intended function, how it operates and its physical environmental and performance characteristics. As a minimum the specification sheets include the following:

1) Dimension, rigid clearances.
2) Mounting or installation details.
3) Connection.
4) Electrical power requirements.
5) Materials of construction.
6) Environmental characteristics.
7) Performance characteristics.

c. Submit all planning information, site preparation instructions, grounding and bonding procedures, cabling diagrams, plug identifications, safety precautions or guards, and equipment layouts to enable Supplier to proceed with detailed site preparation for equipment.

1.4 INFORMATIONAL SUBMITTALS

A. Refer to Section 406100 “Process Control and Enterprise Management Systems General Provisions” for any PCSS requirements regarding informational submittals for instruments.

1.5 CLOSEOUT SUBMITTALS

A. Refer to Section 406100 “Process Control and Enterprise Management System General Provisions.”

1.6 QUALITY ASSURANCE

A. Refer to Section 406100 “Process Control and Enterprise Management System General Provisions.”

1.7 FIELD CONDITIONS

A. Refer to Section 406100 “Process Control and Enterprise Management System General Provisions.”

1.8 WARRANTY

A. Refer to Section 406100 “Process Control and Enterprise Management Systems General Provisions”.

PART 2 - PRODUCTS

2.1 ANTENNA POLES AND TOWERS

A. Manufacturers:

1. Manufacturers and their products are subject to compliance with requirements. Provide one of the following:

    a. Rohn.
    b. Substitutions: Not Permitted.

B. Type:

1. Metallic pole or tower.
2. Used for antenna mounting at radio telemetry sites.
3. Towers shall be used where the antenna height is greater than or equal to 20 feet AGL.
4. Poles may be used where the antenna height is less than 20 feet AGL, or to attach to a tower or other structure.

C. Physical:

1. Height as required to achieve a functional system while meeting permited regulations.
2. Designed without the need of guy wires. Erect tower to meet all local and TIA/EIA codes.
3. Grounding connections from the pole/tower to the grounding grid. Ground in accordance with the electrical specifications and drawings.
4. Tower installation capable of withstanding winds and icing defined in TIA-222 Revision G.
5. Mast and foundation capable of withstanding wind and debris requirements per Building Code.
6. Foundation:

    a. Unless shown otherwise, provide a foundation for each tower or pole.
    b. Concrete foundation and anchor bolts provided under other related Sections.
    c. Refer to Divisions 02 and 03 for foundation and excavation requirements.

7. Metallic Poles:

    a. Poles (not on towers or attached to structures) shorter than 20 feet constructed of 2-inch schedule 40 galvanized steel or 2-inch schedule 80 aluminum tubing.

8. Towers:

    a. Free-standing, rated up to a height of 100 feet. Final height of tower to be determined by the supplier/contractor and to be in conformance with the radio survey.
    b. Hot-dipped galvanized steel support structure.
    c. Tower consists of three vertical faces fabricated of high grade steel tubing with steel angle braces.
    d. Structural components hot-dipped galvanized after fabrication.
    e. Fabricated in 20-foot riser sections, each section being 6-inches smaller on each face than the lower section to which it is connected.
    f. Double bolt holes at each connection joint for each section.
    g. Sections are die-cut equilateral construction with center sections containing steel angle braces between each set of braces.

h. Top section of the tower provided with 2-inch pipe projection (top tube) projecting 30-inches above the tower (total length of top tube to be 52-inches).

i. Section Fabrication:

1) Top section: 1-1/4-inch, 14 gauge tubing minimum.
2) Center section: 1-1/2-inch, 12 gauge tubing minimum.
3) Bottom section: 2-inch, 10 gauge tubing minimum.

j. Provide each leg of the bottom support section with thick steel base plate, welded to the bottom of the section.

D. Required Accessories:

1. Provide stainless steel mounting hardware and fasteners for each installation, appropriate for the specific location and application.
2. Hangers for attaching cables to support brackets.
3. For structures exceeding 200 feet above ground level, provide a white and red medium intensity strobe light system to meet FAA requirements. Provide all required strobes, controllers, and wiring between components for a fully operational system that illuminates a white strobe during daytime and red strobe during the night. Provide lighting system by TWR Lighting, Inc., or approved equal.
4. Provide all necessary support posts, brackets, threaded rods, trapezes, etc., required for the ice bridge and coaxial cable/waveguide support installation. All components constructed from hot dip galvanized steel, except for threaded rods for the trapeze support which are constructed from stainless steel. Support cable ice bridge by galvanized posts at a height minimum of 8-feet above ground level. Cable Ice bridge provided with snap in hangers for up to 14 feed lines.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Prepare written report, endorsed by Installer, listing conditions detrimental to performance.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 COATINGS AND FINISHES

A. All tower painting in accordance with AWWA D102, the Steel Structures Painting Council Specification SSPCPA1, approved paint manufacturer specifications, and as specified herein.

B. Paint system provided by a single manufacturer. Paints and paint products specified herein are manufactured by Tnemec Company and are intended to establish a standard of quality, other types may be used.

C. Do not apply paint if the temperature of the surface to be painted is below the minimum temperature specified by the paint manufacturer, or less than 4 degrees above the dew point temper-

ature. Do not apply paint to wet or damp surfaces or when the relative humidity exceeds 85 percent. Follow paint manufacturer's recommendations for the specific paint system used.

D. After erection and before painting, remove slag, weld metal splatter and sharp edges, points and protrusions by chipping or grinding. Ground all surfaces that have been welded, abraded, or otherwise damaged to a smooth, rounded, surface, cleaned and primed in the field in accordance with the paint system requirements. Normal rippling of field welds is acceptable, following the above grinding.

E. Coat all areas blasted in the field on the same day before any rusting occurs.

F. Clean shop primed components that are not painted with successive coats within the manufacturer's recommended recoat cycle in accordance with SSPC-SP7 - Brush-Off Blast Cleaning.

3.3 INSTALLATION

A. Comply with NECA 1.

B. Wiring Method: Conceal conductors and cables in accessible ceilings, walls, and floors where possible.

C. Wiring within Enclosures: Bundle, lace, and train conductors to terminal points with no excess and without exceeding manufacturer's limitations on bending radii.

3.4 CONNECTIONS

A. Provide the tower base and guy anchor grounding kits for a complete tower grounding system.

B. Ground rods and their connection to the tower in compliance with NFPA 780.

C. Provide three ground rods for each tower base. Connect all three tower base legs to the ground rods using #4 bare copper ground wire and exothermic weld connections.

D. Provide connection to building grounding where cabling enters the building and of ice bridge structure at the building using #4 bare copper ground wire and exothermic weld connections.

E. Provide all necessary ground lugs and clamps.

F. Provide lightning rod assembly(s) bonded directly to the top of the tower structure.

G. Connect tower grounding system, ice bridge grounding system and building grounding system together using #4 bare copper ground wire and exothermic weld connections to create a common ground between all structures/systems.

H. Exothermically bond the ice bridge to one of the tower ground pigtails and building ground pigtail with bare 4/0 copper cable.

I. No bends or curves with a radius of less than 12 inches, or sharper than 70 degrees may be made in any down conductor or other grounding wire.

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J. Upon completion of this work, test ground system to determine if desired ground resistance of 5 Ohms maximum has been attained. If the grounding system does not meet the 5 Ohms requirement during this test, install additional radials or a chemical ground rod(s) as required in order to meet grounding requirement.

END OF SECTION 406666

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SECTION 406717 – INDUSTRIAL ENCLOSURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes industrial enclosures.

B. Related Requirements:

1. Section 406100 “Process Control and Enterprise Management Systems General Provisions” for submittal requirements.
2. Section 406733 “Panel Wiring.”

1.3 ACTION SUBMITTALS

A. Refer to Section 406100 “Process Control and Enterprise Management System General Provisions.”

1.4 INFORMATIONAL SUBMITTALS

A. Refer to Section 406100 “Process Control and Enterprise Management Systems General Provisions.”

1.5 CLOSEOUT SUBMITTALS

A. Refer to Section 406100 “Process Control and Enterprise Management System General Provisions.”

1.6 QUALITY ASSURANCE

A. Perform work in accordance with UL 508 and UL 508A.

B. Provide components compatible with functions required to form complete working system.

C. Provide UL 508A label on complete assembly.

1.7 FIELD CONDITIONS

A. Refer to Section 406100 “Process Control and Enterprise Management Systems General Provisions.”

1.8 WARRANTY

A. Refer to Section 406100 “Process Control and Enterprise Management Systems General Provisions.”

PART 2 - PRODUCTS

2.1 INDUSTRIAL ENCLOSURES

A. Manufacturers:

1. Manufacturers and their products are subject to compliance with requirements. Provide the following:

a. EXM.
b. Substitutions: None permitted.

B. Structure and Enclosure:

1. Panels in indoor, dry, non-corrosive environments:

a. NEMA 12, painted steel or aluminum construction, as required by the schedule in PART 3.

2. Panels in outdoor, wet, or chemically corrosive environments:

a. NEMA 4X, stainless steel or FRP construction, as required by the schedule in PART 3.

3. Panels located in hazardous locations:

a. Rated for the type of hazard (e.g., NEMA 7 for Class 1, Division 1).

4. Construction:

a. Freestanding and floor-mounted vertical panels:

1) Panels of 12-gauge sheet steel.
2) Front panels or panels containing instruments: provide 10-gauge stretcher-leveled sheet steel, reinforced to prevent warping or distortion.

b. Wall and Unistrut mounted panels:

1) Panels no less than 14-gauge steel.

c. Consoles:

1) Panels of 12-gauge sheet steel.
2) Front panels: provide 10-gauge stretcher-leveled sheet steel, reinforced to prevent warping or distortion.

5. Provide angle stiffeners on the back of the panel face to prevent panel deflection under instrument loading or operation, as follows:

a. Structural framework internal to the panel allows for instrument support and panel bracing.
b. Interior structure framework to permit panel lifting without racking or distortion.
c. Removable lifting rings designed to facilitate simple, safe rigging, and lifting of the control panels during installation.

6. Full height and fully gasketed access door with full-length, continuous, piano type stainless steel hinges with stainless steel pins.

a. Provide doors with three-point stainless steel latch and heavy-duty stainless steel locking handle.
b. Provide front access doors of sufficient width to permit instrument or control device mounting without interference from flush mounted instruments.
c. Clamp-type door latches are not permitted.

7. Avoid kinks and sharp bends in wiring.

a. Route wiring for easy access to other components for maintenance and inspection purposes.

8. Panel suitable for top and bottom conduit entry as required by Electrical Drawings.

a. For top mounted conduit entry, provide panel top with nominal one-foot square removable access plates, which may be drilled to accommodate conduit and cable penetrations.
b. Provide all conduit and cable penetrations with ground bushings, hubs, gasketed locknuts, and other accessories as required to maintain the NEMA rating of the panel and electrical rating of the conduit system.

C. General Requirements:

1. UL labeled control panels and cabinets.

a. UL listing includes enclosure, specific equipment supplied with enclosure, and equipment installation and wiring within and on the enclosure. If required for UL labeling, provide ground fault protective devices, isolation transformers, fuses and other equipment necessary to achieve compliance with UL 508A requirement. The Drawings do not detail all UL 508A requirements.

2. Panel door handles with lock, or a hasp and staple for padlocking: key the locks for all control panels provided under this Contract alike.
3. Arrange devices for rear of panel mounting within the panel according to respective panel drawings and in a manner to allow for ease of maintenance and adjustment.

    a. Locate heat generating devices, such as power supplies, at or near the top of the panel.

4. Mount all components in a manner that permits servicing, adjustment, testing, and removal without disconnecting, moving, or removing any other component.

    a. Mount interior panel components on removable plates (sub-panels) and not directly on the enclosure.
    b. Unless shock mounting is required by the manufacturer to protect equipment from vibration, provide rigid and stable mounting.
    c. Mount and orient components in accordance with manufacturer's recommendations.
    d. Identify internal components with suitable plastic or metal engraved nametags mounted adjacent to (not on) each component identifying the component in accordance with the drawings and specifications.

5. Mount all panel components on a single rear-of-panel sub-panel unless the density of devices exceeds the panel mounting space permitted by the minimum panel dimensions specified. Side panel mounted components are not permitted without review and approval by Engineer.

6. Type 316 stainless steel hardware and fasteners:

    a. Provide drilled and tapped mounting screws; self-tapping screws are not permitted.

7. Install suitable gaskets and faceplates, required to maintain NEMA rating of the panel.

D. Mounting Elevations:

1. Refer to ISA Recommended Practice RP60.3 for guidance on layout and arrangement of panels and panel mount components. Account for housekeeping pad dimensions.
2. Locate centerline of indicators and controllers no lower than 48 inches or higher than 66 inches above the floor on a panel face.
3. Locate centerline of lights, selector switches, and pushbuttons no lower than 32 inches or higher than 70 inches above the floor on a panel face.
4. Locate tops of annunciators no higher than 86 inches above the floor on a panel face.
5. Install panel components in accordance with manufacturer's guidelines.

2.2 TEMPERATURE CONTROL

A. Sun Shields:

1. Provide custom fabricated sun shields for all outdoor panels in accordance with the following requirements:

a. Fabricate sun shields from a material suited for the area classification rating of its environment.
b. Design, fabricate, install, and support the unit to fully cover and shade the top, sides, and back of the enclosure, and to partially shade the front panel of the enclosure from direct exposure to sunlight from sunrise to sunset.
c. Depending on overall size, sun shields may be fabricated in single or multiple segments for attachment to the enclosure support framing or to separate free standing framing around the enclosure, to preserve rigidity.
d. Design and mount sun shields with a minimum 3-inch air gap around the enclosure for air circulation and heat dissipation.
e. Drilling holes or welding studs directly to the enclosure for sun shield mounting is not permitted.
f. Slope the top section of the sun shield a minimum angle of 5 degrees from horizontal.

1) Wall mounted enclosures: slope the top section downward away from the wall and towards the front of the enclosure.
2) Free standing, floor mounted, and frame mounted enclosures: slope the top section downward towards the back side of the enclosure.

g. Incorporate a narrow and more steeply sloped drip shield segment on the front edge of the top section to shed water away from the front of the enclosure and prevent dripping or running directly onto the front panel of the enclosure.
h. Fabricate sun shields with continuous seam welds that are ground smooth.
i. Smooth round or chamfer exposed corners, edges, and projections to prevent injury.

B. Heating:

1. Provide an integral heater, fan, and adjustable thermostat for outdoor enclosures and enclosures located in unheated areas indoors or in areas subject to humidity and moisture, to reduce condensation and maintain the minimum internal panel temperature.

a. Mount unit near enclosure bottom with discharge away from heat-sensitive equipment.
b. Provide Hoffman DAH series, Stego PTC series, or equal.

2.3 ACCESSORIES

A. Nameplates:

1. Identify the panel and individual devices as required, unless otherwise indicated:

a. Include up to three lines:

1) First line containing the device tag number as shown on Drawings.
2) Second line containing a functional description (e.g., Recirculation Pump No. 1).
3) Third line containing a functional control description (e.g., Start).

2. Unless escutcheon plates are specified or unless otherwise noted on Drawings:

    a. Furnish nameplates as 3/32-inch thick, black lettering against white background unless otherwise noted, Lamicoid with engraved inscriptions. Bevel and smooth edges of nameplate.
    b. Nameplates with chipped or rough edges are not acceptable.

3. Mount or fasten cabinet mounted nameplates with epoxy adhesive or stainless steel screws.
4. Provide a panel nameplate with a minimum of 1-inch high letters for every panel.
5. Provide legend plates or 1-inch by 3-inch engraved nameplates with 1/4-inch lettering for identification of door mounted control devices, pilot lights, and meters.
6. Use single Lamicoid nameplates with multiple legends for grouping of devices such as selector switches and pilot lights that relate to one function.

B. Print Storage Pockets:

1. Provide print storage pockets of steel construction, welded onto the door of the enclosure.
2. Size storage pockets to accommodate all prints required to service the equipment, and to accommodate 8.5-inch by 11-inch documents without folding.

C. Corrosion Control:

1. Protect panels from internal corrosion by use of corrosion-inhibiting vapor capsules. Size and quantity as necessary per manufacturer recommendations.
2. Manufacturer:

    a. Zerust VC.
    b. Hoffman Model AHCI.
    c. Or equal.

2.4 GENERAL FINISH REQUIREMENTS

A. Descale, degrease, fill, grind and finish sections.

B. Finish steel-fabricated enclosures with two rust resistant phosphate prime coats and two coats of enamel, polyurethane, or lacquer finish which are applied by either hot air spray or conventional cold spray methods.

C. Grind smooth, sandblast and then clean with solvent. Fill surface voids and grind smooth.

D. Immediately after cleaning, apply one coat of a rust-inhibiting primer inside and outside, followed by an exterior intermediate and topcoat of a two-component type epoxy enamel.

1. Apply final sanding to the intermediate exterior coat before top coating.

E. Apply a minimum of two coats of manufacturer’s standard, flat light-colored lacquer, on the panel interior after priming.

F. Unless otherwise noted, finish exterior color shall be white.

G. Finish products after assembly.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Wiring Method: Install cables in raceways and cable trays except within consoles, cabinets, desks, and counters. Conceal raceway and cables except in unfinished spaces.

1. Install plenum cable in environmental air spaces, including plenum ceilings.
2. Comply with requirements for cable trays.
3. Comply with requirements for raceways and boxes.

B. Wiring within Enclosures: Bundle, lace, and train conductors to terminal points with no excess and without exceeding manufacturer's limitations on bending radii. Install lacing bars and distribution spools.

3.2 ADJUSTING

A. Adjust hardware and moving parts to function smoothly and lubricate as recommended by manufacturer.

3.3 INDUSTRIAL ENCLOSURE SCHEDULE

A. Provide the following industrial enclosures:

Panel Designation	Maximum Size	Enclosure Rating	Construction	General Requirements
RTU	36-inch high by 24-inch wide by 12-inch deep	NEMA Type 4X	Type 316 Stainless-Steel	Strut-mounted, single door, front-access only.

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SECTION 406733 - PANEL WIRING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes requirements for internal wiring of control panels and consoles.

B. Related Requirements:

1. Section 406100 “Process Control and Enterprise Management Systems General Provisions” for submittal requirements.
2. Section 406717 “Industrial Enclosures.”
3. Section 406763 “Control Panel Mounted UPS.”
4. Section 407856 “Isolators, Intrinsic Safety Barriers, and Surge Suppressors.”

1.3 DEFINITIONS

A. American Wire Gage (AWG): Measurement of the cross-sectional area of a conductor.

B. Input/Output (I/O): Analog or digital field instrument signals to be received and interpreted by a PLC.

C. Programmable Logic Controller (PLC): A ruggedized programmable computer used for industrial automation.

D. Process Control System Supplier (PCSS): The entity responsible for providing all materials, equipment, labor, and services required to achieve a fully integrated and operational control system.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Refer to Section 406100 “Process Control and Enterprise Management System General Provisions.”

B. Shop Drawings:

1. Refer to Section 406100 “Process Control and Enterprise Management Systems General Provisions.”

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1.5 INFORMATIONAL SUBMITTALS

A. Refer to Section 406100 “Process Control and Enterprise Management Systems General Provisions.”

1.6 CLOSEOUT SUBMITTALS

A. Refer to Section 406100 “Process Control and Enterprise Management System General Provisions.”

1.7 QUALITY ASSURANCE

A. Refer to Section 406717.

1.8 FIELD CONDITIONS

A. Refer to Section 406100 “Process Control and Enterprise Management Systems General Provisions.”

1.9 WARRANTY

A. Refer to Section 406100 “Process Control and Enterprise Management Systems General Provisions.”

PART 2 - PRODUCTS

2.1 CONTROL PANEL - INTERNAL CONSTRUCTION

A. Internal Electrical Wiring:

1. Provide stranded, type MTW interconnecting wiring:

a. Use 600-volt insulation rated for not less than 90 degrees C.
b. Segregate wiring for systems operating at voltages in excess of 120 VAC from other panel wiring.

1) Locate either in separate section of multi-section panel or behind removable Plexiglas or similar dielectric barrier.

c. Develop panel layout such that technicians have complete access to 120 VAC and lower voltage wiring systems without direct exposure to higher voltages.

2. For power distribution wiring on the line side of fuses or breakers:

a. Use 12 AWG minimum.
b. For control wiring on the secondary side of fuses:

1) Use 16 AWG minimum.
2) Utilize 18 AWG shielded, twisted pair cable insulated for not less than 600 volts for electronic analog circuits.

3. Cover power distribution blocks with protective guards to meet "finger-safe" requirements of IP20.
4. Route power and low voltage DC wiring systems in separate wireways.

a. Cross different system wires at right angles.
b. Separate different system wires routed parallel to each other by at least 6-inches.
c. Terminate different wiring systems on separate terminal blocks.
d. Do not fill wiring troughs to more than 60 percent visible fill.

5. Terminations:

a. Terminate wiring onto single tier terminal blocks:

1) Uniquely and sequentially number each terminal block.
2) Direct wiring between field equipment and panel components is not acceptable.
3) Multi-level terminal blocks or strips are not acceptable.

b. Arrange terminal blocks in vertical rows and separated into groups (power, AC control, DC signal).

1) Provide each group of terminal blocks with a minimum of 25 percent spares.

c. Use compression type, fused, unfused, or switched terminal blocks.

1) Use two terminals per point for discrete inputs and outputs (DI and DO) with adjacent terminal assignments.
2) Wire all active and spare PLC and controller points to terminal blocks.

d. Use three terminals per point for analog inputs and outputs (AI and AO) per shielded pair connection with adjacent terminal assignments for each point.

1) Third terminal is for shielded ground connection for cable pairs.

a) Ground the shielded signal cable at the PLC cabinet.
b) Wire all active and spare PLC and controller points to terminal blocks.

e. Use sleeve-type wire and tube markers with heat impressed letters and numbers.
f. Use only one side of a terminal block row for internal wiring.

1) Field wiring side of the terminal not to be within 6-inches of the side panel or adjacent terminal or within 8-inches of the bottom of free-standing

panels, or within 3-inches of stanchion mounted panels, or 3-inches of adjacent wireway.

g. Isolate circuit power from the SCADA cabinet to field devices (switches, dry contacts etc.) that are used as discrete inputs to the PLC input cards with an isolating switch terminal block with flip cover that is supplied with a dummy fuse.

1) Use Allen Bradley Model 1492-H7 or equal.
2) One isolating switch terminal block per loop numbered piece of equipment and one per spare I/O point is acceptable.

h. Isolate all PLC discrete outputs to the field with an isolating fuse switch terminal block with a flip cover and a neon blown fuse indicator.

1) Use Allen Bradley 1492-H4 or equal.

6. Clearly identify wiring to hand switches and other devices, which are live circuits independent of the panel's normal circuit breaker protection as such.
7. Clearly tag and color code wiring.

a. Tag numbers and color coding to correspond to panel wiring diagrams and loop drawings prepared by the PCSS.
b. Power wiring, control wiring, grounding, and DC wiring to utilize different color insulation for each wiring system used.
c. Color coding scheme to be in accordance with UL 508A.

8. Provide surge protectors on all incoming power supply lines at each panel per requirements of Section 407856 “Isolators, Intrinsic Safety Barriers, and Surge Suppressors.”
9. Wiring trough for supporting internal wiring:

a. Plastic type with snap-on covers.
b. Side walls to be open top type to permit wire changing without disconnecting.
c. Trough to be supported to the subpanel by stainless steel screws.
d. Do not bond trough to the panel with glue or adhesives.

10. Provide each panel with a single tube, LED light fixture, 20 Watt in size (minimum):

a. Mounted internally to the ceiling of the panel.
b. Light fixture to be switched and be complete with the lamp.

11. Each panel to have a specification grade duplex convenience receptacle with ground fault interrupter:

a. Mount internally within a stamped steel device box with appropriate cover.
b. Convenience receptacle shall not be powered from a UPS.
c. Protect by a dedicated fuse or circuit breaker.

12. Each panel to be provided with an isolated copper grounding bus for all signal and shield ground connections.

a. Shield grounding to be in accordance with the instrumentation manufacturer's recommendations.

13. Provide each panel with a separate copper power grounding bus (safety) in accordance with the requirements of the National Electrical Code.
14. Each panel to have control, signal, and communication line surge suppression in accordance with Section 407856 “Isolators, Intrinsic Safety Barriers, and Surge Suppressors.”
15. Microprocessor-based electronic devices in the panel shall be powered by the UPS.
16. Provide each panel with a circuit breaker to interrupt incoming power.
17. Additional electrical components including transformers, motor starters, switches, circuit breakers, etc. to follow the requirements of Division 26.

B. Relays not provided under Division 26 and required for properly completing the control function specified in Division 40, Division 26 or shown on the Drawings to be provided under this Section.

C. Orientation of devices including PLC and I/O when installed to be per the manufacturer's recommendations.

1. No vertical orientation of PLC racks is allowed unless specifically indicated by the manufacturer as an acceptable mounting alternative and also approved by Engineer.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Comply with NECA 1.

B. Wiring within Enclosures: Bundle, lace, and train conductors to terminal points with no excess and without exceeding manufacturer's limitations on bending radii.

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SECTION 406763 - CONTROL PANEL MOUNTED UPS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes control panel mounted uninterruptible power supplies (UPS).

B. Related Requirements:

1. Section 406100 “Process Control and Enterprise Management Systems General Provisions” for submittal requirements.
2. Section 406717 “Industrial Enclosures.”
3. Section 406733 “Panel Wiring”.

1.3 DEFINITIONS

A. Uninterruptible Power Supply (UPS): A device capable of providing emergency battery power when the main power source fails.

1.4 ACTION SUBMITTALS

A. Refer to Section 406100 “Process Control and Enterprise Management System General Provisions”.

1.5 INFORMATIONAL SUBMITTALS

A. Refer to Section 406100 “Process Control and Enterprise Management Systems General Provisions.”

1.6 CLOSEOUT SUBMITTALS

A. Refer to Section 406100 “Process Control and Enterprise Management System General Provisions.”

1.7 QUALITY ASSURANCE

A. Provide components compatible with functions required to form complete working system.

1.8 FIELD CONDITIONS

A. Refer to Section 406100 “Process Control and Enterprise Management Systems General Provisions.”

1.9 WARRANTY

A. Refer to Section 406100 “Process Control and Enterprise Management Systems General Provisions.”

PART 2 - PRODUCTS

2.1 24 VDC UNINTERRUPTIBLE POWER SUPPLY

A. Manufacturers:

1. Manufacturers and their products are subject to compliance with requirements. Provide one of the following:

a. Phoenix Contact Quint Series.
b. Sola HD Series.
c. Substitutions: Not Permitted.

B. Type:

1. 24 VDC uninterruptible primary switched mode power supply unit.

C. Operation:

1. Provide uninterrupted 24 VDC power to outputs upon loss of input power.
2. When 24 V supply voltage is applied, connected battery module is charged.
3. In event of a supply voltage failure, battery module is connected to the output, and stored power ensures that all connected devices continue to operate without interruption. UPS supplies a 24 VDC voltage with a load current up to 10 A.

D. Functional:

1. Input voltage range: 22.5 - 30 VDC.
2. Nominal Output Voltage: 24 VDC.
3. Output Current: 10 A.

E. Controls:

1. Dry contacts provided for remote monitoring of UPS conditions:

a. UPS on battery.
b. Fault.

F. Physical:

1. Mounting: horizontal DIN rail mounting.
2. Operating temperature range: 32 to 122 degrees F (0 to 50 degrees C).
3. Degree of protection: IP20.

G. Performance:

1. UPS provides minimum of 15 minutes of run time for calculated full load.

a. Internal or external batteries as necessary to support runtime requirements.

PART 3 - EXECUTION

3.1 UNINTERRUPTIBLE POWER SUPPLY SCHEDULE

A. Provide the following uninterruptible power supplies. Exact sizing of the UPS is the responsibility of the PCSS.

1. RTU. UPS shall power PLC and radio.

3.2

3.2 INSTALLATION

A. Comply with NECA 1.

B. Wiring within Enclosures: Bundle, lace, and train conductors to terminal points with no excess and without exceeding manufacturer's limitations on bending radii.

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SECTION 406863 - CONFIGURATION OF HMI SOFTWARE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. If referred to anywhere else in the project manual, AE or AESS services include, but are not limited to, those services specified in this Section.

B. Provide all programming, configuration, and related services required to achieve a fully integrated and operational system. Control of all equipment to be in conformity with Contract Drawings, process control descriptions, specifications, engineering data, instructions, and recommendations of the equipment manufacturer. Coordinate the control system for proper operation with related equipment and materials furnished by other suppliers under other Sections of these specifications and with related existing equipment. Include the following information:

1. Configuration of the HMI System Software at the Mourning Dove WTP for all controls shown on the drawings.
2. Configuration of the Historian Software.
3. Provide and test communications and functionality data between the RTU and the HMI, to provide a comprehensive working system of data collection, storage and reporting.

C. The software packages to be used are Wonderware InTouch v.2017, Historian v.2017 Standard, and Dev Studio v.2017 Unlimited, in a Microsoft Windows Server 2019/Windows 10 environment.

D. Graphic screens, historian data configuration, and other elements of the new Seminole Lift Station shall duplicate, as far as possible, those of existing Lift Stations.

E. Graphic screens and screen elements associated with the demolished Bayview Lift Station shall be hidden or rendered unreachable by operators at the conclusion of the project.

F. Coordinate all work with plant operating personnel to minimize impacts on daily operation. Note delays caused for any reason and formally submit to the Engineer and the Owner in the form of a letter.

G. Related Requirements:

1. Section 406100 “Process Control and Enterprise Management Systems General Provisions” for submittal requirements.
2. Section 406126 “Process Control System Training.”

3. Section 406343 “Programmable Logic Controllers.”
4. Section 406650 “Radio Telemetry Equipment”.
5. Section 406866 “Configuration of Controller Software.”

1.3 DEFINITIONS

A. Applications Engineering System Supplier (AESS): The entity who provides all programming, configuration, and related services for the control system equipment provided by the PCSS.

B. Human Machine Interface (HMI): A software-based user interface with supervisory level control and of machine level equipment.

C. Input/Output (I/O): Analog or digital field instrument signals to be received and interpreted by a PLC.

D. Operator Interface Terminal (OIT): A hardware component of the HMI used for device level control and monitoring.

E. Process Control System Supplier (PCSS): The entity responsible for providing all materials, equipment, labor, and services required to achieve a fully integrated and operational control system.

F. Programmable Logic Controller (PLC): A ruggedized programmable computer used for industrial automation.

1.4 PREINSTALLATION MEETINGS

A. Refer to Section 406100 “Process Control and Enterprise Management Systems General Provisions.” The meetings below are in addition to the meetings specified in that section.

B. Schedule and conduct a workshop for the following:

1. Standards and Conventions. Review the standards, conventions, and methodologies that will be used to program and develop the programs (i.e., HMI and PLC databases, HMI graphics, and PLC programming, etc.) and will solicit Engineer and Owner's input. Submit an agenda with examples for items to be discussed at a client workshop.
2. Draft Graphics. Present draft graphics for the Owner's and Engineer's review and feedback prior to creating the full set of graphics for review. For repetitive graphics such as graphics for multiple process trains, include an example of the first graphic only for discussion. Include discussion of process and overview displays, examples of pop-ups, trends, and system navigation tools.
3. Historical Data Management. Solicit Engineer/Owner input for storage and management of historical data.

1.5 ACTION SUBMITTALS

A. Provide all required submittals. Provide the submittals listed below at a minimum:

1. System Standards and Conventions.

2. Operator Interface.
3. Controller Program.
4. Historical Data Management.

B. System Standards and Conventions Submittal:

1. Following the standards and conventions workshop, submit standards and conventions to be used on this project. Define the submittal, at a minimum:

    a. Graphic display standards, including color conventions, equipment symbols, display format, equipment control pop-up displays, trend displays, and display navigation. Include samples of each proposed type of graphic display (i.e., overview, detail, diagnostic, tabular, etc.).
    b. System naming conventions, such as graphic displays naming, database naming, tag names, and computer naming.
    c. System configuration, including network addressing and PLC/RTU addressing.
    d. Alarm configuration standards, including priorities and logging.
    e. Security configuration standards, including user groups and privileges.
    f. PLC/RTU standard programming modules, including analog input scaling, flow totalization, equipment runtime, motor start/stop, valve open/close, and any other standard logic planned to be used.

2. To facilitate the Owner's future operation and maintenance, use the submitted standards and conventions as basis for programming and configuration of the system. Do not begin the system programming and configuration prior to the System Standards and Conventions Submittal.

C. Operator Interface:

1. Following the approval of the standards and conventions submittal, submit a draft of all proposed graphic displays, examples of each type of pop-up (faceplate) displays, and examples of trends. For those graphics, which will be duplicated more than once for similar type of equipment, submit graphics for the first equipment only.
2. Following the draft graphics review meeting and prior to the factory test, submit a ready-for testing version of all graphic displays. These graphics should be completely finished other than the incorporation of comments and changes resulting from testing.
3. Submitted graphic displays and trends are to be no less than 8.5 inches by 11 inches and in full color.

D. Historical Data Management:

1. Following the Historical Workshop, submit all aspects of the historical data management system and include as a minimum the following:

    a. A complete listing of all signals to be collected and stored, including data sampling rate and duration for which the data will be immediately accessible.
    b. Data reduction methods, rates, and the duration data will be immediately accessible.
    c. Storage space requirements and supporting calculations.
    d. Historical database design description, including data flow diagram, table definitions, procedures and queries used; and description of method of

accumulating and displaying run times and flow totals. Define the method of interfacing to the reporting system, methods of handling Data Quality Flags, and methods of storing and displaying trending information.

e. Description of methodology for restoring data collected locally during times when the historical data management system is not available. Description of database failure and recovery, including data correction.

f. Description of selecting only the active real-time data source for systems that are utilizing redundant data acquisition nodes.

g. List of data source interfaces to be used with the system (for example, OPC, file collection, historian-historian collector, HMI applications, etc.)

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 GENERAL

A. The system specified performs the following generalized functions:

1. Allows the operator to control equipment such as pumps and valves as shown on the Drawings and as defined in Section 406196 “Process Control Descriptions.”
2. Perform real-time process control, including proportional integral derivative control action, sequencing, and process calculations.
3. Collect, calculate, and store accurate, reliable operating information for present and future uses.
4. Assist remote site operating personnel by noting and communicating of normal operating conditions and equipment failures.
5. Accumulate and store equipment running times for use in preventative maintenance.
6. Provide color graphic displays and reports for use by the system operating and supervisory personnel.
7. Provide trending for analog values.
8. Provide control system diagnostics.
9. Perform process control functions including PID, calculations, sequencing, timing, in the process controller. The HMI software performs the real-time database, report generation, graphic screens, program development, set point modification, data archiving, etc.
10. Allow the operator to manually control (by keyboard entry and mouse type pointing device) the status of pumps, valves, e.g., on/off, open/close, setpoint value,) when viewing the appropriate graphic screen on the HMI.

3.2 GRAPHIC DISPLAYS - GENERAL

A. Ensure displays contain and continuously update the displayed process variables, date and time of day, with process values showing in engineering units. Incorporate on displays:

1. References to both instrumentation tag numbers and plant equipment numbers.
2. Process variables on their associated display(s) with correct engineering units.
3. Process variables with their associated data quality flags.

B. Operator commands related to controlling field devices or system attributes require multiple keystrokes or mouse actions to protect against inadvertent operations. Confirmation to the operator for the selected point to be controlled is provided, at which time a cancellation of the control can be affected.

C. Process graphic displays are depicted from the P&ID's, site plan drawings, mechanical drawings and electrical drawings included in these Contract Documents. The graphic displays include process flow streams, process structures, and all major items of process equipment and control devices in a schematic format.

D. Include on main graphical screens a title bar, main graphic area, navigational buttons, and alarm summary bar.

1. Title bar displayed on the top of each screen and include display name, description and time/date.
2. Main graphical area contains primary screen data in graphical format.
3. Navigational buttons include a minimum of main menu, trends, main alarm summary, and security log in.
4. Alarm summary bar displays the last three valid alarms on the bottom of each screen.

E. Provide animation to mimic level changes in tanks or vessels, and to mimic rotation of rotating equipment when running. Valve colors to change when opened and closed.

F. Adjust from the operator interface timers, setpoints, alarm actuation levels, unless specifically noted.

G. Ensure the system show field conditions with text that can alternate (i.e., OPEN/CLOSE, START/STOP, HIGH/LOW) and change color correspondingly. Field devices that are tri-state must be represented in three conditions.

H. Ensure conditions in the field designated as alarm conditions report to the operator workstation, actuate an audible alarm, and provide a visual blinking image on the associated graphic page. Display alarms and events on the screen and archived.

I. Identify interlocks that affect equipment operation both by alarm and by HMI indication.

J. Check analog inputs for out of range (via high and low limit checks) and alarmed.

K. Label process flow streams and color-code using the project color schedule in Division 09. Identify structures and equipment by name and appropriate equipment and loop tags.

L. Color coding for equipment status and alarms is as follows:

1. Red for on or open.
2. Green for off or closed.
3. Active, unacknowledged alarms are indicated by flashing amber.
4. Active, acknowledged alarms are indicated solid amber.

M. Automatically record alarm and events should any of the following sequences or events occur:

1. Date/Time entry.
2. Limit changes.
3. Commanded or un-commanded change of any point.
4. Alarm conditions.
5. PLC activation or deactivation.
6. Operator login or logout activity.

3.3 SPECIFIC GRAPHIC SCREENS

A. At a minimum, provide the following types of graphic screen indicated below.

1. Plant Overview screen including a site plan representation, indicating the geographic location of each process and building.
2. Main menu screen linking all screens and process areas; complete and logical listing names and number of all screens.
3. Overall plant process block flow diagram screen showing major processes in block form with flow arrows. Each block includes a text description of key individual treatment processes. Navigational buttons to the individual treatment processes can be performed by pressing on the text description.
4. Individual treatment process screens graphically screening key process variables and equipment. Features:

    a. No operator entries are available from these screens.
    b. Individual process flow screens for each process include all process components, including tanks, pumps, blowers, mixers, drives, flow meters, valves, mechanical devices, as well as manual shutoff and isolation valves.
    c. These diagrams are generally depicted from the P&ID's with at least 1 screen per P&ID on average.

5. Individual unit process screens depicted from the P&ID's are used for control and screen of each major item of process equipment, process variables, and control devices, including pumps, blowers, valves, gates, mixers, and drives. Navigational buttons consist of the P&ID's flow arrows to other individual unit processes. The unit process screens provide the ability for the operator to go to individual equipment popup screens. These diagrams are generally depicted from the P&ID's with at least 2 screens per P&ID on average.
6. Provide popup screens for each piece of equipment to start/stop equipment, open / close valves, implement automatic control, adjust set points, establish and adjust tuning parameters, set alarm limits and initiate a sequence.
7. PLC system diagnostic screens, showing the operational status, and fault conditions of all PLC components, including processors, I/O modules, OIT's, power supplies and UPS units.
8. Communications diagnostic screens, showing the details of network status, communications status of all major components including Operator Work Stations, peripheral devices and network components.
9. Maintenance screens display the raw value for each analog and digital I/O point in the system. They allow the operators/maintenance personnel to enter an override value for an analog point that is then used by the system instead of the value read from the input card / communications link.

10. Trend screens with the capability to screen up to eight, operator assigned, analog and/or digital process variables. Each analog value will be shown on a trend screen.
11. Main alarm summary screen includes the following information for each alarm: Time, tag name, description, alarm type, current value and status. An acknowledge alarm button acknowledges all new unacknowledged alarms. Display alarms in the alarm summary screen and in the alarm banner as follows:

    a. Unacknowledged and active alarm: Displayed on screen, blinking.
    b. Acknowledged and active alarm: Displayed on screen, not blinking.
    c. Unacknowledged and inactive alarm: Displayed on screen, blinking. Text/background of the alarm displayed in a different color than active alarms.
    d. Acknowledged and inactive alarm: Not displayed in banner.

12. Analog variable screens showing a tabular summary of all plant process variables, in operator assigned groupings.

3.4 SECURITY

A. Configure and implement the system with security to prevent unauthorized access. The system allows authorized changes to system operation through defined user accounts and password verification.

B. Coordinate with Owner user account information, including login name and password for each account.

C. Assign security levels of "display only," "operator mode," "supervisor mode," and "engineer mode" through assignable passwords. On system startup, automatically enter the "display only" security level. In the "display only" mode, information is available to be displayed on the screen, but no changes may be made. In the "operator mode," changes may be made to process set points, times, etc.; however, the overall control concepts may not be modified. In the "supervisor mode," all operator functions can be modified, and any special reports or critical process set points (data can be modified; however, the overall control concepts may not be modified). In the "engineer mode" level, all user modifiable parameters of the system are available for modification.

3.5 ALARM/EQUIPMENT STATUS REPORTING

A. Display on the alarm log all alarms as they occur. Include on the alarm message the time of occurrence, tag name, tag number, and whether it is a low, high, or failure alarm. When the point in alarm returns to normal, the time, point identification number, and return to normal are displayed. Include on all reports the plant equipment number of the associated device.

B. Log the equipment status whenever a change in status occurs (i.e., start, stop). Include on the equipment status log the time, equipment name, tag number, and the particular change in status.

3.6 HISTORICAL DATA MANAGEMENT

A. Provide the following features for processing and storage of system historical data:

1. Each system point (analog or digital, real or pseudo) has the capability of being historically logged. A point can be deleted from historical log at any time. Points can be added or deleted from the system using minimal keystrokes.
2. Sample and store all process analogs and all flow totals and run time indications of all primary process equipment motors in the historical data management system.
3. Data Processing: Store the real time instantaneous values in a historical log file on the hard disk at defined sampling rates.
4. Data Correction: Manually modify historical data by personnel with appropriate security levels. Differentiate such data from actual monitored values on reports, in the database and in trends.
5. Data Quality: Propagate data Quality flags to the next higher level of the history based on user selectable percentage determining tolerance levels for averages and totals. If the percentage of suspect data exceeds the tolerance level, the suspect data flag propagates to the next higher level. Maximums and minimums are taken from good data.
6. Manual Input Data Handling: This data consists of additional values not obtainable by the system such as laboratory analysis for use in reports. Enter and store all manually entered data in the appropriate engineering units. Display all data entered for confirmation on the display prior to incorporation to the database.

3.7 TESTING

A. Refer to Section 406121.20 “Process Control System Testing”.

B. Prior to leaving the site, use the Owner's programming computer to monitor all PLC processors online, make on-line changes, upload, and download the processor to ensure programming software version compatibility.

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SECTION 406866 - CONFIGURATION OF CONTROLLER SOFTWARE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. If referred to anywhere else in the project manual, AE or AESS services include, but are not limited to, those services specified in this Section.

B. Provide all programming, configuration, and related services required to achieve a fully integrated and operational system. Control all equipment in full conformity with the Contract Drawings, process control descriptions, specifications, engineering data, instructions, and recommendations of the equipment manufacturer. Coordinate the control system for proper operation with related equipment and materials furnished by other suppliers under other Sections of these specifications and with related existing equipment.

1. Provide configuration of the PLC provided for all equipment shown on the drawings, except for controls equipment shown being provided as part of a vendor package system.

C. Coordinate all work with plant operating personnel to minimize impacts on daily operation. Note delays caused for any reason and formally submitted to the Engineer and the Owner in the form of a letter.

D. Related Requirements:

1. Section 406100 “Process Control and Enterprise Management Systems General Provisions” for submittal requirements.
2. Section 406343 “Programmable Logic Controllers.”
3. Section 406650 “Radio Telemetry Equipment”.
4. Section 406863 “Configuration of HMI Software.”

1.3 DEFINITIONS

A. Applications Engineering System Supplier (AESS): The entity who provides all programming, configuration, and related services for the control system equipment provided by the PCSS.

B. Human Machine Interface (HMI): A software-based user interface with supervisory level control and of machine level equipment.

C. Input/Output (I/O): Analog or digital field instrument signals to be received and interpreted by a PLC.

D. Operator Interface Terminal (OIT): A hardware component of the HMI used for device level control and monitoring.

E. Process Control System Supplier (PCSS): The entity responsible for providing all materials, equipment, labor, and services required to achieve a fully integrated and operational control system.

F. Programmable Logic Controller (PLC): A ruggedized programmable computer used for industrial automation.

1.4 PREINSTALLATION MEETINGS

A. Refer to Section 406100 “Process Control and Enterprise Management Systems General Provisions.” The meetings below are in addition to the meetings specified in that section.

B. Refer to Section 406863 “Configuration of HMI Software” for requirements of the standards and conventions workshop.

1.5 ACTION SUBMITTALS

A. Controller Program Submittal:

1. For each controller, submit the following using the controller manufacturer's built in printing functions. Electronic submission of Adobe Portable Document Format ("pdf") files in lieu of paper submittals is acceptable. Review will be for general program organization, level of documentation, and overall programming standards (basic pump and valve control, for example). The review will not attempt to confirm the logic works correctly for every loop.

    a. PLC programs showing ladder logic, function block, high level language or another controller language used. Include individual rung, network, and/or command descriptions with abundant comments to clearly identify function and intent of each code segment. Clearly present each logic segment, describe the function of each timer, label and define the purpose of each subroutine call, etc. Ensure that program documentation is sufficiently clear to allow determination of compliance with the process control requirements included in the control descriptions and with the Drawings. The submittal demonstrates that all logic provided under this project follows the same structure and format and reflects a common programming approach.
    b. Submit a memory usage report for the controller. Indicate total memory capacity and unused memory capacity.
    c. Submit cross reference index of I/O allocation and controller memory address. Include every physical I/O point as well calculated or virtual I/O required for the implementation of the process scheme.

2. Submit details of control system communication. Submit a "memory map" or other means showing which signals are exchanged between PLCs. Also submit an HMI tag

database showing all signals exchanged between the PLCs and HMI. Define any specific communication block memory addresses.

B. Submit all electronic files associated with the controller such that the Owner and Engineer can open a complete copy of the controller program using the controllers native programming package.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 CONTROLLER PROGRAMS

A. Develop all application programs in a structured manner and follow an intuitive arrangement so that instrumentation technician with basic programming knowledge will be able to understand. Utilize standard program templates or subroutines for repetitive logic such as equipment control, flow total calculations, equipment runtime calculations.

B. Make changes to the application programs and software configuration, based on comments during the submittals, the factory tests, the field tests, and during the commissioning process to meet the design intent, at no additional cost to Owner.

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SECTION 407000 - INSTRUMENTATION FOR PROCESS SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes the general requirements to furnishing, installing, and servicing PCSS provided instruments.

B. Related Requirements:

1. Section 406100 “Process Control and Enterprise Management Systems General Provisions” for submittal requirements.
2. Section 407113 “Magnetic Flow Meters”.
3. Section 407276 “Level Switches”.
4. Section 407313 “Pressure and Differential Pressure Gauges”.
5. Section 407326 “Gauge Pressure Transmitters”.
6. Section 407336 “Pressure and Differential Pressure Switches”.

1.3 DEFINITIONS

A. Process Control System Supplier (PCSS): The entity responsible for providing all materials, equipment, labor, and services required to achieve a fully integrated and operational control system.

1.4 ACTION SUBMITTALS

A. Submit complete documentation for all field instruments in one comprehensive submittal. Submit a complete Bill of Materials (BOM) or Index that lists all instrumentation equipment, sorted by Loop Number.

B. Submit separate data sheets for each instrument type. Use ISA-TR20.00.01-2007 data sheet format as a cover sheet for each instrument prior to data sheets. Data shall include but not be limited to:

1. Plant Equipment Number and ISA tag number per the Drawings.
2. Product (item) name used herein and on the Drawings.
3. Manufacturer's complete model number.
4. Location of the device.
5. Input - output characteristics.
6. Range, size, and graduations in engineering units.

C. Submit the following information for each instrument type:

1. Include construction details, material descriptions, dimensions of individual components and profiles.
2. Sizing calculations where applicable.
3. Indicate which instruments will be provided with certified calibration data (i.e., all flow metering devices) as part of O&M manual.
4. Include rated capacities, operating characteristics, electrical characteristics and furnished specialties and accessories.
5. Include drawings of mounting sub-assemblies such as sun shields.

D. Submit catalog cuts for all instruments. Submit descriptive literature for each hardware component, which fully describes the units being provided.

1.5 INFORMATIONAL SUBMITTALS

A. Refer to Section 406100 “Process Control and Enterprise Management Systems General Provisions.”

1.6 CLOSEOUT SUBMITTALS

A. Refer to Section 406100 “Process Control and Enterprise Management Systems General Provisions.”

1.7 MAINTENANCE MATERIAL SUBMITTALS

A. Refer to individual instrument specifications for spare parts requirements.

B. Refer to Section 406100 “Process Control and Enterprise Management Systems General Provisions” for PCSS requirements regarding submission of maintenance materials.

1.8 QUALITY ASSURANCE

A. Refer to individual instrument specifications for quality assurance requirements as well as which specific instruments require manufacturer’s start-up and training services.

B. Provide components compatible with functions required to form complete working system.

C. Refer to Section 406100 “Process Control and Enterprise Management Systems General Provisions” for overall quality assurance requirements for PCSS scope of work.

1.9 FIELD CONDITIONS

A. Refer to Section 406100 “Process Control and Enterprise Management Systems General Provisions.”

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1.10 WARRANTY

A. Refer to Section 406100 “Process Control and Enterprise Management Systems General Provisions.”

PART 2 - PRODUCTS

2.1 INSTRUMENT TAGS

A. Permanent stainless steel or other non-corrosive material tag firmly attached and indelibly marked with the instrument tag number, as indicated in the Drawings. Tag equipment before shipping to the site.

B. Provide 1/8-inch by 3/8-inch, Type 316 stainless steel button head machine screws.

C. All supplied instrument transmitters and instrument transmitter elements require a stainless steel identification tag. Attach tag via stainless steel chain or stainless steel wire (24-gauge min) to a non-removable part of device. Stamp the ISA alphanumeric instrument number as indicated on the P&ID, loop, or detail drawings into the tag. Minimum tag size is 1-inch H x 3 inches W with 3/16-inch high alphanumeric characters.

PART 3 - EXECUTION

3.1 INSTALLATION

A. See installation requirements in individual specification sections.

B. Mount instrumentation on instrumentation racks or stands, unless otherwise indicated. For outdoor installations, provide sun shields constructed of sturdy, corrosion- and UV-resistant material, with space around the instrument for air circulation and maintenance handling. Where possible, orient equipment outdoors to face north to minimize the impact of glare and ultraviolet exposure on digital readouts.

C. Provide shutoff and drain valves on all instrumentation tubing connections.

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SECTION 407113 - MAGNETIC FLOW METERS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes magnetic flow meters.

B. Related Requirements:

1. Section 406100 “Process Control and Enterprise Management Systems General Provisions.”
2. Section 407000 “Instrumentation for Process Systems.”

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Refer to Section 407000 “Instrumentation for Process Systems.”

B. Shop Drawings:

1. Refer to Section 407000 “Instrumentation for Process Systems.”

1.4 CLOSEOUT SUBMITTALS

A. Refer to Section 406100 “Process Control and Enterprise Management System General Provisions.”

1.5 QUALITY ASSURANCE

A. Provide components compatible with functions required to form complete working system.

B. Ensure that materials of construction of wetted parts are compatible with process liquid.

C. Materials in Contact with Potable Water: Certified to NSF 61 and NSF 372.

1.6 FIELD CONDITIONS

A. Refer to Section 406100 “Process Control and Enterprise Management System General Provisions.”

1.7 WARRANTY

A. Refer to Section 406100 “Process Control and Enterprise Management Systems General Provisions.”

PART 2 - PRODUCTS

2.1 MAGNETIC FLOW METERS

A. Manufacturers:

1. Manufacturers and their products are subject to compliance with requirements. Provide the following:

a. McCrometer Ultra Mag.
b. Substitutions: Not Permitted.

B. General:

1. Low-frequency, electromagnetic induction-type flow meter, producing a linear signal directly proportional to flow rate, consisting of flow tube, signal cable, and transmitter.

C. Type:

1. Between-flange mounting.
2. Comply with AWWA M33.

D. Performance and Design Criteria:

1. Process Fluid: Raw municipal sewage.
2. Accuracy: Plus or minus 0.5 percent of actual flow rate over a 30:1 range, within velocity limits of 0.2 to 32 ft/sec.

E. Physical:

1. Body Material: Carbon Steel.
2. Liner: Fusion-bonded epoxy.
3. Electrodes: Type 316 stainless steel.
4. Flanges: ANSI 150 lb or DIN PN 16.
5. Flange Material: Carbon steel.
6. Environment: NEMA 6P/IP68 when connected to remote transmitter.

F. Accessories:

1. Rated for hazardous area, Class I, Division 2.
2. Provide manufacturer cable between flow tube and transmitter, with potted strain-relief type connection, 25 feet in length.
3. Furnish stainless steel grounding rings, wires, and gaskets as recommended by the manufacturer. All materials must be suitable for the process and surrounding pipe.

2.2 TRANSMITTERS

A. Manufacturer: Same manufacturer as meter.

B. Transmitter Output:

1. 4- to 20-mA DC analog signal.

C. Housing: NEMA 4X (IP67), suitable for surface or pipe stand mounting.

D. Display:

1. Touch-screen programming, functioning through enclosure window without opening enclosure.
2. Size: Four lines by 16 characters.
3. Type: Backlit digital display.
4. User-selectable engineering units.
5. Readout of diagnostic error messages.

E. Control Power:

1. 120VAC, single phase, 60 Hz.
2. Provide local transformers as required.

F. Mounting:

1. Mounting: Remote, up to 25 feet from flow meter.
2. Remote Mounting Locations Less Than 4 feet above Grade: Provide stainless steel mounting posts.

G. Required Accessories:

1. A fully configurable and locally viewable totalizer integral to the transmitter.
2. Current signal output simulation.
3. Empty pipe detection.
4. Self-diagnostics.
5. Signal Cable: Provided by flow meter manufacturer.

2.3 DEVICE SCHEDULE

A. FE/FIT-1030: Seminole LS Flow.

1. Size: 8-inch.
2. Flow Range: 0 – 900 gpm.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Comply with NECA 1.

3.2 IDENTIFICATION

A. Refer to item in this specification for tagging designation.

3.3 STARTUP SERVICE

A. Perform startup service.

1. Complete installation and startup checks according to manufacturer's written instructions.
2. The start-up services include calibration, oversight of installations of sensor, and start-up of the sensor/transmitter in order to provide reliable measurement at the instrument. Work with the PCSS and AESS to verify the transmitter sends correct information to the control system (i.e., that the scaling and units are the same at the instrument and on the control system's operator interface/PLC). Submit instrument calibration report in order to document the calibration procedure of the instruments.

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SECTION 407276 - LEVEL SWITCHES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes level switches.

B. Related Requirements:

1. Section 406100 “Process Control and Enterprise Management Systems General Provisions.”
2. Section 407000 “Instrumentation for Process Systems.”

1.3 DEFINITIONS

A. Single Pole Double Throw (SPDT): A switch with one input and two output contacts.

B. Double Pole Double Throw (DPDT): A switch with two inputs and two output contacts.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Refer to Section 407000 “Instrumentation for Process Systems.”

B. Shop Drawings:

1. Refer to Section 407000 “Instrumentation for Process Systems.”

1.5 CLOSEOUT SUBMITTALS

A. Refer to Section 406100 “Process Control and Enterprise Management System General Provisions.”

1.6 QUALITY ASSURANCE

A. Provide components compatible with functions required to form complete working system.

B. Ensure that materials of construction of wetted parts are compatible with process liquid.

C. Materials in Contact with Potable Water: Certified to NSF 61 and NSF 372.

1.7 FIELD CONDITIONS

A. Refer to Section 406100 “Process Control and Enterprise Management Systems General Provisions.”

1.8 WARRANTY

A. Refer to Section 406100 “Process Control and Enterprise Management Systems General Provisions.”

PART 2 - PRODUCTS

2.1 FLOAT SWITCHES

A. Manufacturers:

1. Manufacturers and their products are subject to compliance with requirements. Provide one of the following:

a. Contegra FS 90.
b. Siemens Water Technologies Model 9G-EF.
c. Substitutions: Or equal.

B. Type:

1. Mercury free ball float switch.

C. Function/Performance:

a. Differential: Less than 8-inch.
b. Type of Switch: SPDT snap switch.
c. Switch Rating: 1A at 120 VAC or 100 VA @ 120 VAC.

D. Physical:

1. Type 316 stainless steel, Teflon or non-stick coating, minimum 5-inch diameter.
2. Totally encapsulated switch.
3. Heavy-duty cable, PVC or equivalent jacketed integral to float.

E. Required Accessories:

1. Provide stainless steel hardware.

2. Lead wire to be a waterproof cable of sufficient length so that no splice or junction box is required in the vault.
3. Provide cast-aluminum weatherproof junction box outside the sump pit with terminals for all floats and tapped as required for conduit connections.
4. Provide mounting equipment as shown on Drawings.

2.2 DEVICE SCHEDULE

A. LSH/LS/LSL/LSLL-1000: Seminole LS Wet Well High Level/Lag On/Lead On/All Stop.

1. High Level Alarm Elevation: -3.50´.
2. Lag Pump On Elevation: -4.00´.
3. Lead Pump On Elevation: -4.50´.
4. All Stop Elevation: -9.50´.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Comply with NECA 1.

3.2 IDENTIFICATION

A. Refer to item in this specification for tagging designation.

3.3 STARTUP SERVICE

A. Perform startup service.

1. Complete installation and startup checks according to manufacturer's written instructions.
2. The start-up services include calibration, oversight of installations of sensor, and start-up of the sensor/transmitter in order to provide reliable measurement at the instrument. Work with the PCSS and AESS to verify the transmitter sends correct information to the control system (i.e., that the scaling and units are the same at the instrument and on the control system’s operator interface/PLC). Submit instrument calibration report in order to document the calibration procedure of the instruments.

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SECTION 407313 - PRESSURE AND DIFFERENTIAL PRESSURE GAUGES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes pressure and differential pressure gauges.

B. Related Requirements:

1. Section 406100 “Process Control and Enterprise Management Systems General Provisions.”
2. Section 407000 “Instrumentation for Process Systems.”

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Refer to Section 407000 “Instrumentation for Process Systems.”

B. Shop Drawings:

1. Refer to Section 407000 “Instrumentation for Process Systems.”

1.4 CLOSEOUT SUBMITTALS

A. Refer to Section 406100 “Process Control and Enterprise Management System General Provisions.”

1.5 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Pressure and Differential Pressure Gauges: Furnish one spare unit of each type and range installed.

1.6 QUALITY ASSURANCE

A. Provide components compatible with functions required to form complete working system.

B. Ensure that materials of construction of wetted parts are compatible with process liquid.

C. Materials in Contact with Potable Water: Certified to NSF 61 and NSF 372.

1.7 FIELD CONDITIONS

A. Refer to Section 406100 “Process Control and Enterprise Management Systems General Provisions.”

1.8 WARRANTY

A. Refer to Section 406100 “Process Control and Enterprise Management Systems General Provisions.”

PART 2 - PRODUCTS

2.1 PRESSURE GAGES

A. Manufacturers:

1. Manufacturers and their products are subject to compliance with requirements. Provide one of the following:

a. Ametek US Gauge.
b. Ashcroft.
c. Substitutions: Or equal.

B. Type:

1. Bourdon tube actuated dial face pressure gauge.

C. Function/Performance:

1. Accuracy: Plus or minus 1.0 percent of full-scale range.
2. Provide for zero-reading adjustment.
3. Adjusting Screws: Accessible from rear of case without need for disassembly.
4. Comply with ASME B40.100.

D. Physical:

1. Dial:

a. Nominal Diameter: 4-1/2 inches.
b. Face: White, laminated plastic dials with black graduations.
c. Scale: Extend over arc not less than 200 and not more than 270-degrees.
d. Ranges and Graduation Units: As indicated on instrument schedule.

2. Cases:

a. Material: Phenolic.
b. Provide removable rear plate.
c. For gauge pressure, vented case for temperature/atmospheric compensation
d. Windows:

1) Material: Clear acrylic or shatterproof glass.
2) Thickness: 1/8-inch.
3) Provide gasket.

3. Bourdon Tubes:

a. Material: Stainless steel, to brass socket.
b. Provide welded, stress-relieved joints.

4. Connection:

a. Location: Bottom.
b. Socket:

1) 1/2-inch NPT male thread.
2) Material: Brass forging.
3) Extend minimum 1-1/4 inches below gage cases.
4) Provide wrench flats.

c. Mounting: Stem or surface.

E. Required Accessories:

1. Furnish gauges as part of pressure instrument assemblies as shown on the Instrumentation Detail.
2. Liquid fill gauges at factory with colorless glycerin or silicone oil. Alternative vibration dampening technologies are not acceptable substitutes for liquid fill.

2.2 DEVICE SCHEDULE

A. PG-1011 and 1012: Seminole LS Pump 1 and 2 Discharge Pressure.

1. Range: 0-60 psig.

B. PG-1020: Seminole LS Discharge Pressure.

1. Range: 0-60 psig.

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PART 3 - EXECUTION

3.1 STARTUP SERVICE

A. Perform startup service.

1. Complete installation and startup checks according to manufacturer's written instructions.
2. The start-up services include calibration, oversight of installations of sensor, and start-up of the sensor/transmitter in order to provide reliable measurement at the instrument. Works with the PCSS and AESS to verify the transmitter sends correct information to the control system (i.e., that the scaling and units are the same at the instrument and on the control system’s operator interface/PLC). Submit instrument calibration report in order to document the calibration procedure of the instruments.

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SECTION 407326 - GAUGE-PRESSURE TRANSMITTERS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes gauge-pressure transmitters.

B. Related Requirements:

1. Section 406100 “Process Control and Enterprise Management Systems General Provisions.”
2. Section 407000 “Instrumentation for Process Systems.”

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Refer to Section 407000 “Instrumentation for Process Systems.”

B. Shop Drawings:

1. Refer to Section 407000 “Instrumentation for Process Systems.”

1.4 CLOSEOUT SUBMITTALS

A. Refer to Section 406100 “Process Control and Enterprise Management System General Provisions.”

1.5 QUALITY ASSURANCE

A. Provide components compatible with functions required to form complete working system.

B. Ensure that materials of construction of wetted parts are compatible with process liquid.

C. Materials in Contact with Potable Water: Certified to NSF 61 and NSF 372.

1.6 FIELD CONDITIONS

A. Refer to Section 406100 “Process Control and Enterprise Management Systems General Provisions.”

1.7 WARRANTY

A. Refer to Section 406100 “Process Control and Enterprise Management Systems General Provisions.”

PART 2 - PRODUCTS

2.1 GAUGE PRESSURE TRANSMITTERS

A. Manufacturers:

1. Manufacturers and their products are subject to compliance with requirements. Provide one of the following:

a. ABB 266HRH.
b. Foxboro IGP20.
c. Rosemount 3051CG.
d. Siemens Sitrans P DS III.
e. Smar LD301M.

B. Function/Performance:

1. Measuring Range: As shown in the instrument schedule in Section 407000 “Instrumentation for Process Systems.”
2. Accuracy: 0.075 percent of span.
3. Operating Temperature: -4 to 176-degrees F (-20 to 80-degrees C).
4. Temperature Effect: Combined temperature effects less than 0.2 percent of maximum span per 82-degrees F (28-degrees C) temperature change.
5. Output Signal: 4 to 20 mA DC linear with pressure, with HART protocol.
6. Output: Zero adjustable over the range of the instrument calibrated span is greater than the minimum calibrated span.
7. Stability: 0.05 percent of upper range limit for 1 year.
8. Response Time: Less than 1 ms.
9. Display: Digital indicator displaying pressure in the engineering units indicated on Drawings or in the instrument device schedule.
10. Diagnostics:

a. Self-diagnostics with transmitter failure driving output to above or below out of range limits.
b. Simulation capability for inputs and loop outputs.

c. Test terminals available to ease connection for test equipment without opening the loop.
d. Registers to record minimum and maximum pressure and temperatures transmitter has been exposed to be available.

11. Over Range Protection: Provide positive over range protection to 150 percent of the maximum pressure of the system being monitored.

C. Physical:

1. Power Supply: 24 VDC loop power.
2. Enclosure:

a. NEMA 4X (IP66), explosion proof.
b. Approved for Class I, Division 1, Groups C and D.
c. Instruments for hazardous locations have Factory Mutual (FM), Canadian Standards Association (CSA), and CENELEC approvals and certifications as specified herein and as indicated on Drawings or in instrument device schedule.

3. Process Wetted Parts (except for ozone/oxygen service):

a. Isolating diaphragm and other wetted metal parts: Type 316L stainless steel.
b. Gaskets and O-rings: Teflon.

4. Sensor Fill Fluid (except for ozone/oxygen service): Silicone.

D. Required Accessories:

1. Furnish transmitter as part of pressure instrument assembly as shown on Instrumentation Detail.

2.2 DEVICE SCHEDULE

A. PIT-1020: Seminole LS Discharge Pressure.

1. Range: 0-60 psig.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Comply with NECA 1.

3.2 IDENTIFICATION

A. Refer to item in this specification for tagging designation.

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3.3 STARTUP SERVICE

A. Perform startup service.

1. Complete installation and startup checks according to manufacturer's written instructions.
2. The start-up services include calibration, oversight of installations of sensor, and start-up of the sensor/transmitter in order to provide reliable measurement at the instrument. Work with the PCSS and AESS to verify the transmitter sends correct information to the control system (i.e., that the scaling and units are the same at the instrument and on the control system’s operator interface/PLC). Submit instrument calibration report in order to document the calibration procedure of the instruments.

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SECTION 407336 - PRESSURE AND DIFFERENTIAL PRESSURE SWITCHES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes pressure and differential pressure switches.

B. Related Requirements:

1. Section 406100 “Process Control and Enterprise Management Systems General Provisions.”
2. Section 407000 “Instrumentation for Process Systems.”

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Refer to Section 407000 “Instrumentation for Process Systems.”

B. Shop Drawings:

1. Refer to Section 407000 “Instrumentation for Process Systems.”

1.4 CLOSEOUT SUBMITTALS

A. Refer to Section 406100 “Process Control and Enterprise Management System General Provisions.”

1.5 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Pressure and Differential Pressure Switches: Furnish one spare switch of each type and range installed.

1.6 QUALITY ASSURANCE

A. Provide components compatible with functions required to form complete working system.

B. Ensure that materials of construction of wetted parts are compatible with process liquid.

C. Materials in Contact with Potable Water: Certified to NSF 61 and NSF 372.

1.7 FIELD CONDITIONS

A. Refer to Section 406100 “Process Control and Enterprise Management Systems General Provisions.”

1.8 WARRANTY

A. Refer to Section 406100 “Process Control and Enterprise Management Systems General Provisions.”

PART 2 - PRODUCTS

2.1 PRESSURE SWITCHES

A. Manufacturers:

1. Manufacturers and their products are subject to compliance with requirements. Provide one of the following:

a. Ashcroft.
b. Mercoid.
c. Static-O-Ring (SOR).
d. Substitutions: Or equal.

B. Type:

1. Pressure: Diaphragm actuated.

C. Function/Performance:

1. Accuracy: Plus or minus 5 percent of operating range.
2. Type of Switch: SPDT snap action.
3. Switch Rating: 10A at 230VAC.
4. Repeatability: Better than 1 percent of full scale.
5. Set Points: Adjustable between 20 and 80 percent of adjustable range.
6. Automatic reset type.
7. Over Range Protection: Provide positive over range protection to 150 percent of the maximum pressure of the system being monitored.

D. Physical:

1. Hermetically sealed switches.
2. Enclosures shall meet the area classification of the location where the device is being installed.
3. Materials:

a. Diaphragm: Stainless steel.
b. Wetted parts: Type 316L Stainless Steel.
c. Seals: Viton.
d. Connection port: Type 316 Stainless Steel.

4. Connection:

a. Location: Bottom.
b. Size: 1/4-inch (6 mm).
c. Furnish taps for sensing lines.

E. Required Accessories:

1. Furnish gauges as part of pressure instrument assemblies as shown on Instrumentation Detail.

2.2 DEVICE SCHEDULE

A. PSH-1011 and 1012: Seminole LS Pump 1 and 2 Discharge Pressure High.

1. Setpoint: 40 psig, to be adjusted at startup.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Comply with NECA 1.

3.2 IDENTIFICATION

A. Refer to item in this specification for tagging designation.

3.3 STARTUP SERVICE

A. Perform startup service.

1. Complete installation and startup checks according to manufacturer's written instructions.
2. The start-up services include calibration, oversight of installations of sensor, and start-up of the sensor/transmitter in order to provide reliable measurement at the instrument.

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Work with the PCSS and AESS to verify the transmitter sends correct information to the control system (i.e., that the scaling and units are the same at instrument and on the control system's operator interface/PLC). Submit instrument calibration report in order to document the calibration procedure of the instruments.

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SECTION 407816 - INDICATING LIGHTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes indicating lights.

B. Related Requirements:

1. Section 406100 “Process Control and Enterprise Management Systems General Provisions” for submittal requirements.
2. Section 406717 “Industrial Enclosures.”

1.3 ACTION SUBMITTALS

A. Refer to Section 407000 “Instrumentation for Process Systems.”

1.4 INFORMATIONAL SUBMITTALS

A. Refer to Section 406100 “Process Control and Enterprise Management Systems General Provisions”.

1.5 CLOSEOUT SUBMITTALS

A. Refer to Section 406100 “Process Control and Enterprise Management System General Provisions.”

1.6 MAINTENANCE MATERIAL SUBMITTALS

A. None Required.

1.7 QUALITY ASSURANCE

A. Provide components compatible with functions required to form complete working system.

1.8 FIELD CONDITIONS

A. Refer to Section 406100 “Process Control and Enterprise Management Systems General Provisions.”

1.9 WARRANTY

A. Refer to Section 406100 “Process Control and Enterprise Management Systems General Provisions.”

PART 2 - PRODUCTS

2.1 PILOT TYPE INDICATING LIGHTS

A. Manufacturers:

1. Manufacturers and their products are subject to compliance with requirements. Provide one of the following:

a. Allen Bradley.
b. Eaton Cutler-Hammer.
c. General Electric.
d. Square D.
e. Substitutions: Or equal.

B. Type:

1. Energy efficient, Solid-State LED Lamps.

C. Function/Performance:

1. Low voltage LED lamps suitable for the voltage supplied.
2. Integral reduced voltage transformers for 120VAC powered lights.
3. Replaceable lamps from the front of the unit.
4. Push-to-test operator type.

D. Physical:

1. NEMA 4X.
2. Lens caps: 1.18-inch (30 mm) diameter.
3. Lens color:

a. Running, on, open - Red.
b. Stopped, off, closed - Green.
c. Alarm - Amber.
d. White - Power on.
e. Blue - All other status indications not covered by the above.

4. Provide legend faceplates engraved to indicate the required function of each device.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Comply with NECA 1.

B. Wiring within Enclosures: Bundle, lace, and train conductors to terminal points with no excess and without exceeding manufacturer's limitations on bending radii.

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SECTION 407819 - SWITCHES AND PUSH BUTTONS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes switches and push buttons.

B. Related Requirements:

1. Section 406100 “Process Control and Enterprise Management Systems General Provisions” for submittal requirements.
2. Section 406717 “Industrial Enclosures.”

1.3 ACTION SUBMITTALS

A. Refer to Section 407000 “Instrumentation for Process Systems.”

1.4 INFORMATIONAL SUBMITTALS

A. Refer to Section 406100 “Process Control and Enterprise Management Systems General Provisions”.

1.5 CLOSEOUT SUBMITTALS

A. Refer to Section 406100 “Process Control and Enterprise Management System General Provisions.”

1.6 MAINTENANCE MATERIAL SUBMITTALS

A. None Required.

1.7 QUALITY ASSURANCE

A. Provide components compatible with functions required to form complete working system.

1.8 FIELD CONDITIONS

A. Refer to Section 406100 “Process Control and Enterprise Management Systems General Provisions.”

1.9 WARRANTY

A. Refer to Section 406100 “Process Control and Enterprise Management Systems General Provisions.”

PART 2 - PRODUCTS

2.1 SELECTOR SWITCHES AND PUSHBUTTONS

A. Manufacturers:

1. Manufacturers and their products are subject to compliance with requirements. Provide one of the following:

a. Allen Bradley.
b. Crouse Hinds (NEMA 7).
c. Cutler-Hammer.
d. General Electric.
e. Square D.
f. Substitutions: Or equal.

B. Type:

1. Heavy-duty oil tight type with stackable contact blocks.

C. Function/Performance:

1. Contact arrangement and switching action as required for the control system specified.
2. For 120VAC service, provide contacts rated 10A at 120VAC. For 24VDC service, provide silver sliding contacts rated 5A at 125VDC. For electronic (millivolt/milliamp) switching, provide contacts rated 1A at 28VDC.

D. Physical:

1. NEMA 4X.
2. Size: 1.18-inch (30 mm) diameter.
3. Pushbuttons: Flush type operators.
4. Selector switches: Knob or wing lever operators.
5. Provide legend plates denoting switch/pushbutton position and/or function.

PART 3 - EXECUTION

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3.1 INSTALLATION

A. Comply with NECA 1.

B. Wiring within Enclosures: Bundle, lace, and train conductors to terminal points with no excess and without exceeding manufacturer's limitations on bending radii.

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SECTION 407856 - ISOLATORS, INTRINSICALLY SAFE BARRIERS, AND SURGE SUPPRESSORS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes isolators, intrinsically safe barriers, and surge suppressors.

B. Related Requirements:

1. Section 406100 “Process Control and Enterprise Management Systems General Provisions” for submittal requirements.
2. Section 407000 “Instrumentation for Process Systems.”

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Refer to Section 407000 “Instrumentation for Process Systems”.

B. Shop Drawings:

1. Refer to Section 407000 “Instrumentation for Process Systems”.

1.4 CLOSEOUT SUBMITTALS

A. Refer to Section 406100 “Process Control and Enterprise Management System General Provisions.”

1.5 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Isolators, Intrinsically Safe Barriers, and Surge Suppressors: Furnish 10 percent, minimum 1, spare units of each type of device installed.

1.6 QUALITY ASSURANCE

A. Provide components compatible with functions required to form complete working system.

1.7 FIELD CONDITIONS

A. Refer to Section 406100 “Process Control and Enterprise Management Systems General Provisions.”

1.8 WARRANTY

A. Refer to Section 406100 “Process Control and Enterprise Management Systems General Provisions.”

PART 2 - PRODUCTS

2.1 INTRINSIC SAFETY BARRIERS

A. Manufacturers:

1. Manufacturers and their products are subject to compliance with requirements. Provide one of the following:

a. Gems – 54800 (4-20mA) and 65800 (dry contacts).
b. R. Stahl – Intrinspak.
c. Siemens Water Technologies – IS1 (4-20mA) and IS6 (dry contacts).
d. Substitutions: Or equal.

B. Type:

1. Solid state electronic type in which the energy level of the sensing or actuation circuit is low enough to allow safe usage in hazardous areas.

C. Function/Performance:

1. Provide barrier for instrumentation and equipment transmitting analog or digital signals that originate in hazardous area as indicated in the design documents.
2. Locate in non-hazardous areas.
3. Match power supply provided.

D. Physical:

1. Mounting: DIN Rail.

2.2 INTRINSIC SAFETY BARRIERS (FOR 2-WIRE TRANSMITTER SYSTEMS)

A. Manufacturers:

1. Manufacturers and their products are subject to compliance with requirements. Provide one of the following:

a. Gems.
b. P&F.
c. Unitech.
d. Substitutions: Or equal.

B. Type:

1. Passive devices requiring no external voltage supply.

C. Function/Performance:

1. Supplied with series resistors, series fuse and shunt zener diodes to limit the transfer of energy to levels required by intrinsically safe protection between safe and hazardous locations.
2. Factory Mutual approved and certified for use in accordance with National Fire Protection Association (NFPA 493).

D. Physical:

1. Mounting: DIN Rail.

2.3 SURGE PROTECTION FOR CONTROL SYSTEMS

A. Manufacturers:

1. Manufacturers and their products are subject to compliance with requirements. Provide the following:

a. DEHN.
b. Substitutions: Not Permitted.

B. Function/Performance:

1. Provides surge protection of electronic instrumentation from induced surges propagated along the signal and power supply lines from lightning, utility, or the plan electrical systems.
2. Protection system lower than the instrument withstand level, while not interfering with normal operation.
3. Maintenance free and self-restoring.
4. Response time: Less than 50 nanoseconds.
5. Discharge surge current: At least 8kA (at an 8x20µs impulse waveform).

C. Required Surge Protection:

1. Analog Signal (4-20mA) Circuits:

a. Provide surge protection where any part of the circuit is outside of the building envelope.
b. Protect circuits at both the transmitter and the control system end of the circuit.
c. Mount transmitter surge protectors in separate NEMA 4X enclosure or conduit mount.
d. Use of a single device to protect both 120VAC and 4-20mA wires is acceptable.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Comply with NECA 1.

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SECTION 407859 - POWER SUPPLIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes power supplies.

B. Related Requirements:

1. Section 406100 “Process Control and Enterprise Management Systems General Provisions” for submittal requirements.
2. Section 406717 “Industrial Enclosures.”
3. Section 406733 “Panel Wiring.”

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Refer to Section 407000 “Instrumentation for Process Systems.”

B. Shop Drawings:

1. Refer to Section 407000 “Instrumentation for Process Systems.”

1.4 INFORMATIONAL SUBMITTALS

A. Refer to Section 406100 “Process Control and Enterprise Management Systems General Provisions” for any PCSS requirements regarding informational submittals for instruments.

1.5 CLOSEOUT SUBMITTALS

A. Refer to Section 406100 “Process Control and Enterprise Management System General Provisions.”

1.6 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Power Supplies: One (1) spare unit.

1.7 QUALITY ASSURANCE

A. Provide components compatible with functions required to form complete working system.

1.8 FIELD CONDITIONS

A. Refer to Section 406100 “Process Control and Enterprise Management Systems General Provisions.”

1.9 WARRANTY

A. Refer to Section 406100 “Process Control and Enterprise Management Systems General Provisions.”

PART 2 - PRODUCTS

2.1 POWER SUPPLIES (24VDC)

A. Manufacturers:

1. Manufacturers and their products are subject to compliance with requirements. Provide one of the following:

    a. Phoenix Contact.
    b. SOLA HD.
    c. Substitutions: Not Permitted.

B. Type:

1. 24VDC power supply to power field instruments loops shown on Drawings.

C. Function/Performance:

1. Input power: 115VAC, plus or minus 10 percent, 60 Hz.
2. Output voltage: 24VDC.
3. Output voltage adjustment: 5 percent.
4. Line regulation: 0.05 percent for 10V line change.
5. Load regulation: 0.15 percent no load to full load.
6. Ripple: 3 mV RMS.
7. Operating temperature: 32 to 140 degrees F (0 to 50 degrees C).
8. Sized to accommodate the design load plus a minimum 25 percent spare capacity.

D. Physical:

1. Mounting: DIN rail. Mounted such that heat dissipation does not adversely affect other panel components.
2. Equipped with power on/off circuit breaker.
3. Provide relay contact to indicate power supply fault.
4. Output overvoltage and overcurrent protective devices to protect from damage due to power supply failure and external failure.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Comply with NECA 1.

B. Wiring within Enclosures: Bundle, lace, and train conductors to terminal points with no excess and without exceeding manufacturer's limitations on bending radii.

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SECTION 432513 - SUBMERSIBLE SOLIDS HANDLING PUMPS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Submersible Solids Handling Pumps.

    a. Mounting Configuration: Wet pit.

2. Equipment under this Section by a single manufacturer.
3. Supervisory services during installation and field testing of each unit and instructing regular operating personnel in proper care, operation and maintenance of the equipment.

B. Related Requirements:

1. Section 055000 “Metal Fabrications” for access hatches, fasteners, brackets, and other miscellaneous metal fabrications as required by this Section.
2. Section 406100 “Process Control and Enterprise Management Systems General Provisions”.
3. Section 406121.20 “Process Control System Testing”.
4. Section 407000 “Instrumentation for Process Systems”.
5. Section 407313 “Pressure and Differential Pressure Gauges”.
6. Section 407336 “Pressure and Differential Pressure Switches”.

1.3 COORDINATION

A. Coordinate installation and startup of Work of this Section with Owner’s operations.

1.4 ACTION SUBMITTALS

A. Product Data: Literature, drawings, equipment descriptions, and materials of construction. Documentation of full conformance and compliance with specifications for each pump model proposed.

1. Total Weight of Equipment: Include weight of single largest item.
2. Materials List: For equipment specified.
3. Bill of Materials: For equipment specified.
4. Crane Information: Crane assembly specified.

5. Crane details and materials of construction.
6. Manufacturer's Recommended Spare Parts List:

    a. Manufacturer's current price for each item.
    b. Include gaskets, seals, etc.
    c. List bearings by bearing manufacturer's numbers only.
    d. Grip-eye or approved equal.

B. Shop Drawings:

1. Certified dimensional drawings showing details of pump construction and auxiliary apparatus with respect to tank and respective pump stations.
2. Hatch Openings: Demonstrate sufficient clearance for pump removal.
3. Pump Supports: Design details, anchor bolt locations, sizing information, and installation requirements.

    a. Manufacturer to provide anchorage layout and design.
    b. Contractor to provide anchor bolts, washers and nuts as specified.

4. Portable Davit Crane: Crane assembly details, dimensioned Davit crane and baseplate layout showing Davit crane locations with respect to tank.
5. Wiring Diagrams and Schematics: Power and control systems. Wiring requirements between system components, motors, sensors, and related systems.
6. Motor Data: Including, but not limited to the following.

    a. Type of enclosure design.
    b. Rated horsepower.
    c. Rated voltage.
    d. FLA.
    e. Starting current.
    f. LRA.
    g. LR KVA.
    h. NEMA starting code letter and insulation code letter.
    i. RPM.
    j. Input power in kW at nameplate rating.
    k. Starting calculations.
    l. Cable size.
    m. Efficiency: At 50, 75, and 100 percent load.
    n. Power Factor: At 50, 75, and 100 percent load.
    o. Winding temperature rise.
    p. Speed torque curves.
    q. Trip and Alarm Settings: For temperature protective devices.
    r. Power and control cable size.
    s. Materials of construction.
    t. Cable sealing method.
    u. Description of motor thermal protection and insulation system.
    v. Service factor.

C. Manufacturer's Certificate:

1. Manufacturer's Installation Certification: Installation is per Manufacturer’s installation, operation and maintenance manuals; as specified in PART 3.

2. Manufacturer's Field Report: As specified in PART 3.

1.5 INFORMATIONAL SUBMITTALS

A. Test and Evaluation Reports:

1. Proposed Pump Factory Test Plan: Description. Include procedures and equipment.
2. Proposed Field Test Plan: Description. Include procedures and equipment. See Paragraph 3.3 for more on test plan and minimum inspection checks.
3. Factory and Field Performance Test Data: For Approval. As specified in PART 2 and 3.
4. Milestone Schedule: Factory inspection, testing, shipping, and job site delivery.

B. Manufacturer's Instructions: Detailed instructions on installation, requirements, storage and handling procedures.

C. Source Quality-Control Submittals: Indicate results of factory tests and inspections.

D. Field Quality-Control Submittals: Identify the entity and qualified individual who will inspect the installation in accordance with “Inspection and Testing” Article in Part 3.

E. Manufacturer Reports: Indicate that equipment has been installed according to manufacturer's instructions.

F. Qualifications Statement: Submit qualifications for Manufacturer.

G. Complete description of surface preparation and shop painting for pumps and motors.

H. Critical Speed Analyses Report: Include Campbell diagrams, backup documentation, and Statement of Guarantee.

1. Statement of Guarantee: Critical speed analyses as required in the “Quality Assurance” Article of this Specification has been completed and the specified limitations/separation margins are met.

I. Design Data, Characteristics and Performance:

1. Guaranteed performance curves per ANSI/HI 14.6.

a. Grade 1U for specified intermediate design point.
b. Grade 1E for other specified points.
c. Actual factory tests results of similar units, showing they met specified requirements for head, flow rate, overall efficiency, guaranteed maximum net positive suction head required (NPSH3), submergence, and horsepower.

2. Submit curves on 8-1/2 by 11-inch sheets, as large a scale as practical. Plot from zero flow at shut-off head to pump flow rate at minimum specified total head (TH).
3. Show POR and AOR per ANSI/HI 9.6.3. Prepare information for proposed pump.
4. Catalog sheets showing family of curves are not acceptable.

J. Warranty Information: Demonstrate conformance to “Warranty Article.”

1. Authorized Warranty Center: Within a 3-day shipping radius of job site; fully staffed with factory trained mechanics and equipped with stock of strategic spare parts for each pump models furnished for Project. Document warranty center location prior to delivery of equipment.

1.6 CLOSEOUT SUBMITTALS

A. Project Record Documents: Document actual locations and final orientation of equipment and accessories.

B. Operation and Maintenance Data Manual: As specified.

1. Prepare for this project installation. Include cuts, drawings, equipment lists, descriptions, etc. required to instruct operating and maintenance personnel unfamiliar with equipment.
2. Include trouble shooting data, full preventative maintenance schedules, and complete spare parts lists with ordering information.

1.7 MAINTENANCE MATERIAL SUBMITTALS

A. Manufacturer to Furnish the Following:

1. Special tools and test equipment required for proper servicing of equipment as specified in this Section. Furnish in a steel tool chest with lock and duplicate keys.
2. Furnish two sets of manufacturer’s recommended spare parts for each pump size, including but not limited to; mechanical seals, bearings, gaskets, lubricants, sealants, and heat transfer medium (as needed), necessary for first five years operation of each pumping system.
3. Provide list of the Manufacturer's recommended spare parts with the Manufacturer's current price for each item. Include gaskets, seals, etc. on the list. List all bearings by bearing manufacturer's numbers only.

1.8 QUALITY ASSURANCE

A. Manufacturer:

1. Coordination Responsibilities: Pumps, motors, motor starters, guide rails, access hatches, cranes, and other auxiliary equipment.
2. Equipment Furnished: New, unused, and standard. Furnished with accessories required and meeting specified requirements.
3. Service Record: Successful five-year record servicing equipment and systems similar to that specified.
4. Certified to ISO 9001 Standard: For design and manufacture of submersible solids handling pumps.

B. Both Contractor and Manufacturer: Share responsibility for satisfactory installation and operation of entire pumping systems including pumps, motors, motor starters and accessories.

C. Equipment Specified in this Section:

1. Provide standard pumping equipment from Manufacturer in operation for 10 years.
2. Manufactured by companies experienced in production of equipment used in system applications as stated in the “System Description,” Article in Part 2.
3. Manufacture per Hydraulic Institute Standards, unless otherwise specified.
4. Furnish from single manufacturer.
5. Must operate satisfactorily when installed as shown on Drawings, as specified, and as approved by Engineer.

1.9 DELIVERY, STORAGE AND HANDLING

A. Protect equipment and parts against damage during shipment.

B. Store equipment per Manufacturer's recommendations.

C. Long Term Storage: Protect and store parts so no damage or deterioration occurs during prolonged delays from time of fabrication to installation; per Manufacturer’s requirements.

1. On-Site Long-Term Storage: Follow Manufacturer's detailed long-term storage requirements.

D. Factory Assembled Parts and Components: Do not dismantle for shipment without written permission from Engineer.

E. Finished Surfaces; Exposed Pump Openings: Protect with blank flanges of rigid wooden or equivalent material. Secure with bolts or other manufacturer approved means.

F. Unpainted Finished Iron or Steel Surfaces: Protect to prevent rust and corrosion.

G. After Hydrostatic or Other Tests: Drain entrapped water prior to shipment. Protect to prevent entrance of water and moisture during shipment, storage and handling.

H. Box or Package Markings: Contents and net weight.

I. Engineer’s Approval: Do not ship until given written approval by Engineer.

1.10 EXISTING CONDITIONS

A. Environmental Requirements: For wet pit application suitable for continuous duty operation under the following service conditions.

1. Environment: Outdoor raw sewage pumping application.
2. Area classification:

a. Wet Pit Pumps: Class I, Division I.

3. Maximum ambient temperature: 40 degrees C.
4. Altitude: up to 10 feet above MSL.

B. Special Requirements: Contractor required to make or verify field measurements prior to start of work.

C. Field Measurements: Verify prior to fabrication. Document on Shop Drawings.

1.11 WARRANTY

A. Manufacturer Warranty: Pump, motor, and controls for period of five years.

PART 2 - PRODUCTS

2.1 SYSTEM DESCRIPTION

A. Pump raw sewage from Lift Station to Discharge Manhole.

1. Equipment Specified in this Section: Includes submersible pumps, motors, guide rails, base elbows and hoisting equipment for wet pit applications, moisture and temperature motor protection, and accessories.
2. The pumping units required under this Section shall be complete including pumps and motors with proper alignment and balancing of the individual units. All parts shall be so designed and proportioned as to have liberal strength, stability, and stiffness and to be especially adapted for the work to be done. Ample room shall be provided for inspection, repairs, and adjustments.

B. Pump Motors, Cables, and Appurtenances: Rated for operation in a Class I, Division 1 (for wet pit).

C. Pumping Units: Totally submersible, solids handling, rotodynamic with submersible close coupled motors. Each unit to be aligned, balanced and designed to pump wastewater with suspended solids.

D. Wet Pit Applications: Pumping units to be automatically connected to discharge piping when lowered into place on discharge connection, providing a watertight seal.

1. Pumps: Easily removable from discharge connections and wet well for inspection or service. Lifting pumps from discharge connections and wet well is not to require removal of fasteners or fastenings or require personnel to enter pump well.
2. Base Elbows: Rigidly and accurately anchored in position.

a. Provide anchor bolts, plates, nuts and washers.

E. Baseplates and stands for Wet Pit Pumps: Rigidly and accurately anchored in position.

1. Provide anchor bolts, plates, nuts and washers.

F. Nameplates: Stainless steel. Permanently attached to each pump and/or motor.

1. Give name of manufacturer, rated flow rate, head, speed, and other pertinent data.

2. Wet Pit Applications: Provide additional stainless steel nameplates on local control panels and other above grade locations as instructed by Engineer. Orient and locate so pumps do not need to be moved to gather information.

2.2 CONDITIONS OF OPERATION

A. Manufacturers and Products: Provide pump units from the following:

1. Flygt.
2. No substitutions are permitted.

B. Each pump is to be designed for the conditions of operation tabulated as follows.

Conditions of Operation

Item Description – Lift Station Pumps	**Design Conditions**
Pump Name	P-1011 & P-1012
Service	Raw Sewage
Number of Pumps (operating/standby)	2 (1/1)
Installation Type/Orientation	Wet Pit / Vertical
Maximum Motor Full Load Speed (FLS) (rpm)	1,800
Maximum Allowable Motor Horsepower (non-overloading throughout operating range) (HP)	60
Motor Design Voltage/Phase/Frequency	460/3/60
Maximum Anticipated Pumped Fluid Temperature (degrees F.)	104
Minimum Pump Discharge Size (inches)	4
Minimum Base Elbow Discharge Size (inches)	4
Minimum Pump Shut-Off Head at Motor FLS Acceptable Range (minimum/maximum) (feet)	200/225
Flow Rate at Secondary Operation Point (gpm)	550
Minimum TH at Secondary Operation Point (feet)	160
Minimum Overall Efficiency at Secondary Operation Point (percent)*	50
Maximum NPSH3 at Secondary Operation Point (feet)	20
Intermediate (Design) Point Flow Rate (gpm)	900
Minimum TH at Intermediate (Design) Point Flow Rate (feet)	135
Minimum Overall Efficiency at Intermediate (Design) Point Flow Rate (percent)*	60
Best Efficiency Point (BEP) Flow Rate Acceptable Range (minimum/maximum) (gpm)	900/1,300
Minimum Overall Efficiency at BEP (percent)*	63
Primary Operation Point TH (feet)	67
Minimum Flow Rate at Primary Operation Point (gpm)	1,500
Minimum Overall Efficiency at Primary Operation Point (percent)*	30
Maximum NPSH3 at Primary Operation Point (feet)	28
Minimum Size Solids Passing (inches)	3
Minimum Submergence Above Pump Casing (feet)/Maximum Duration at Min. Submergence (minutes)	0/ Continuous
Drive Type	Constant Speed
Suggested Pump Models	Flygt NP 3202 HT3~467

* Note that minimum overall efficiencies listed are “wire-to-water” in accordance with ANSI/HI 14.6 – latest edition.

2.3 PUMP CONSTRUCTION

A. Overall Pump Design: Combine high efficiency and low required NPSH3.

1. Wastewater Applications: Handle high solids concentrations effectively. Impellers/Casings: Must have passage surfaces to which solid or fibrous materials cannot adhere. Capable of passing fibrous and nonwoven materials found in domestic wastewater. Permit low liquid velocities, gradual acceleration, and change of flow direction of pumped media.

B. External Pump and Motor Parts: Close grained cast iron, ASTM A48 Class 35B construction, with all parts in contact with wastewater protected by corrosion resistant coatings.

1. External Bolts and Nuts: Type 316 stainless steel.

C. Impellers:

1. Construction: ASTM A48 Class 30 minimum gray cast iron. Dynamically balance impellers as specified below.
2. Rotodynamic: Two-plane dynamically balanced per ISO 1940-1 quality grade G2.5 standard to provide smooth, vibration free operation.

a. Low Flow, High Head Applications:

1) Recessed, solids handling type.
2) Capable of passing fibrous material and three-inch minimum diameter solids.

b. Wastewater Applications with Flushable Fibrous and Non-Woven Material:

1) Semi-open, solids handling type.
2) Capable of passing solids due to internal clearances or other features facilitating solids processing including a wear plate with groove.
3) Wear Plate to Impeller Clearance: Easily adjustable without pump disassembly or the need to add or remove shims.
4) Impeller may include pump out vanes on upper shroud reducing axial thrust and minimize clogging due to debris accumulation around the mechanical seal.

D. Casing Wear Ring or Plate: Provides efficient sealing between casing and impeller. A stationary stainless steel ring fitted to casing inlet or stainless steel wear plate installed in lower half of casing.

1. Enclosed or Semi Open Impeller Designs: Stationary wear ring or wear plate to have minimum 50 points Brinnell hardness greater than rotating wear ring or semi-open impeller vane tip hardness.
2. Alternative Materials and Design Approaches: Approved by Engineer.

E. Balanced Tandem Mechanical Shaft Seal System.

1. Upper (Inner) Tandem Seal Set:

    a. Operate in seal lubricant chamber located just below the stator housing.
    b. One Stationary Ring: Tungsten carbide or silicon carbide.
    c. One Positively Driven Rotating Ring: Tungsten carbide or Carbon.
    d. Function: Independent secondary barrier between pumped liquid and stator housing.

2. Lower (Outer) Tandem Seal Set:

    a. One Stationary Ring: Tungsten carbide.
    b. One Positively Driven Rotating Ring: Tungsten carbide.
    c. Function: Primary barrier between pumped liquid and stator housing.
    d. Each Interface: Held in contact by its own Hastelloy-C® or Elgiloy® spring system.
    e. Seal Body: Type 316 stainless steel.
    f. O-Rings: FKM (Viton).
    g. Must require no maintenance and adjustment but be easily inspected and replaced.
    h. Provide pressure applied to outside diameter of face.
    i. Not Acceptable: Conventional double mechanical shaft seals containing either a common single or double spring, acting between the upper and lower units.

F. Minimum Pump Discharge Size:

1. Wet-Pit Application: Minimum allowable nominal diameter of discharge connection provided for attachment to discharge piping, as shown on Drawings, except as allowed otherwise by this specification.
2. Unless Otherwise Noted: Diameter of opening at connection between pump and discharge to be the same as the minimum specified discharge size.

G. Pump Seal Against Discharge Connection:

1. Wet-Pit applications: Pump must tightly seal against discharge connection. Accomplish with simple linear downward motion of pumping unit guided by two guide rails. No portion of the pump is to bear directly on the wet well floor.

    a. Sliding Guide Bracket: An integral part of or bolted to the pumping unit.
    b. Pump Casing Machined Connection System: For attachment of the ASTM A48, Class 35, cast iron discharge connection.
    c. Sealing System: Positive leak proof system providing easy pump removal. Two machined metal-to-metal flanges or flanges with replaceable rubber seal, form fitted to the machined discharge coupling.
    d. Discharge Connection:

        1) Rigidly and accurately anchored to floor of wet well.
        2) Precisely leveled and aligned.
        3) Completed Installation: Free from stress or distortion with Type 316 stainless steel sleeve cast-in anchor bolts, monel nuts and accessories.
        4) Must receive the pump connection without need of any bolts or nuts.

H. Lifting Cable for Wet-Pit Applications:

1. Lifting Cable and Chain: Type 316 stainless steel cable and short piece of suitably sized Type 316 stainless steel chain between bail and cable.

    a. Rating: Five times pump weight; minimum.
    b. Combined Length: Equal to wet well depth; top slab finished grade to wet well bottom, plus six feet to permit raising pump for inspection and removal.

2. Attach lifting cable to lifting bail on pump.
3. Eyebolts are not an acceptable alternate to a lifting bail.

2.4 SUBMERSIBLE MOTORS

A. Pump Motors: Inverter duty rated, housed in an air filled, water-tight casing.

1. Insulated Windings: Class H or better, non-hygroscopic and moisture resistant.
2. Motors Greater than 15 HP: Oil filled motor housings are not acceptable.
3. Motors 15 HP or Smaller: Oil filled motor housing is acceptable in wet pit applications.
4. Suitable for use with solid-state starters or variable frequency drives.
5. Motor Stator: Dipped and baked three times in VPI process and heat shrunk fitted into stator housing.

    a. Alternative: Trickle impregnation method may be used for motor stator windings.
    b. No penetrations of stator housing, such as bolts, pins or other fastening devices.

6. NEMA Design B:

    a. Service Factor: 1.15 as defined in NEMA MG1, based upon nameplate horsepower rating for across-the-line service.

7. Insulation System: Rated at 155 degrees C or better.
8. Capable of continuous operation at ambient 40 degrees C with Class B temperature rise, and 12 starts per hour without affecting bearing and winding design life.
9. NEMA Starting Code G or H, or better.
10. Non-overloading. Capable of twelve starts per hour. Insulated upper motor bearing.
11. Minimum Power Factor at Full Load: 0.80.

    a. Power Factor Correction Capacitors: By manufacturer if motor is below minimum power factor value for constant speed applications.

12. Motor Efficiency: 80 percent at full load to meet wire-to-water efficiency specified in “Conditions of Operation” Article in Part 2.

B. Pump Motor Cooling Characteristics:

1. Permit continuous operation in totally, partially or non-submerged condition.
2. Three overheat, self-resetting sensing devices: One in each motor winding. Trip at 140 degrees C. Wire devices into controls. If a device activates, pump must shut down.

C. Closed Loop Cooling Circuit:

1. Integrated Cooling Pump: Rated for continuous duty in completely wet mode and fully submerged condition without damage.
2. Cooling Jacket: Cast iron ASTM A48 class 30 or steel.
3. Coolant Pump Impeller: Mounted on motor shaft between tandem mechanical seals to circulate coolant fluid into top inter-space between cooling jacket and motor housing and over motor surface, through ducts in bearing housing and into a casing heat exchanger.
4. Heat Losses From Motor: Transfer to fluid pumped in casing heat exchanger, which forms a structural unit together with pump discharge cover. After passing through volute-casing heat exchanger, coolant returns to suction side of internal coolant pump (impeller).
5. Coolant: Environmentally safe glycol or food grade oil rated for use at temperatures of minus 20 degrees C.
6. Auxiliary Cooling Systems such as Fans or Blowers external of pump motor enclosure is not acceptable.

D. Non-overloading within range of operation between shutoff and low head run-out conditions shown on pump conditions of operation data table above.

1. Where specific speed is 4,500 or greater, the range from the pump head and system head curves intersection point and low-head run out conditions shall be used to demonstrate non-overloading over the range of operating conditions.
2. Wet Pit Applications: Capable of running continuously in totally dry condition under full load without damage for a cleaning cycle.

E. Pump/motor shaft: Type 420 or 431 stainless steel.

1. Operating at Pump Design Point:

   a. Shaft Deflection at Lower Seal Face: 0.2 mm maximum.
   b. Shaft Deflection at Wear Ring Area: 0.45 mm maximum.

2. Permanently lubricated ball bearings sized to withstand axial and radial forces.
3. Bearing Life: ABMA Minimum L-10: 50,000 hours rated at pump BEP.

F. Pump motor, its Appurtenances, and Cable: Capable of continuous submergence underwater without loss of watertight integrity to depth of 65 feet. Mating surfaces: Machined, fitted with O-rings for watertight sealing.

G. Power and Control Cable Entry System: Design precluding specific torque requirements ensuring a watertight and submersible seal.

1. Certified by UL or FM to have passed pull-testing requirements.
2. Chamber and motor: Separated by a stator lead, sealing gland or terminal board, which isolates the motor interior from foreign material gaining access to pump motor top.
3. Field serviceable.
4. Entry Into Lead Connection Chamber: Epoxy encapsulated or mechanical seal for positive moisture sealing and as approved by Engineer.
5. Cable Grommet: BUNA-N, in addition to epoxy sealed leads and as approved by Engineer.

H. Power and Control Cables:

1. Supply pumps with power and sensor conductors.
2. Pump motor cables: Sized to meet applicable NEC requirements.
3. Cables: Exceed industry standards for oil, gas and sewage resistance.

    a. Type SPC or SEOW insulated cables with double jacketed protection system.

        1) Outside: Neoprene or chlorinated polyethylene.
        2) Inside: Synthetic rubber.
        3) Insulation rated for 90 degrees C.

    b. Individual conductors: Type RUW.
    c. Sufficient length so cables are continuous between pump and control panel. No splices allowed.

4. Coordinate the installation of the above materials with the Manufacturer.

2.5 PUMP PROTECTION MODULE

A. Pump manufacturer shall provide a pump/motor protection module for each pump to monitor temperature and moisture. The system shall provide warning and shutdown protection and shall be UL listed. All of the pump/motor unit protective and monitoring sensors shall be connected to a module which will relay a signal from the pump/motor sensors to the variable frequency drive.

B. The protection modules shall be installed inside the pump control panel as described in Division 26.

C. Each pump/motor unit(s) shall be equipped with the following protection and monitoring sensors:

1. Three motor winding bi-metallic thermal switches or thermistors, one installed in each motor stator phase winding, and connected in series to monitor and protect the winding from over temperature operation. The thermal switches shall open, activating an alarm and stopping the motor should a high temperature event occur.
2. Two leakage sensors shall be provided to detect water intrusion into the stator chamber and junction chamber. A Float Leakage Sensor (FLS), a small float switch, shall be used to detect the presence of water in either the stator chamber or junction chamber. When activated, the FLS will stop the motor and activate an alarm. Use of voltage sensitive solid-state sensors shall be acceptable upon Engineer approval.

D. Relays Associated with Monitoring and Protective Devices: Furnished by Manufacturer.

1. Outputs: All outputs rated for 1A at 120VAC.

    a. Motor High Temperature (Common Fault).
    b. High Moisture (Leak).

2.6 PROCESS CONTROL DESCRIPTION

A. General

1. The pump stations consist of two (2) submersible solids handling pumps in a one duty/ one standby configuration.

2. Automatic operation shall consist of the following sequence:

   a. The pumps shall be cycled on and off based on the level in the wet well. The lead pump will start when the water surface elevation reaches the pumps on float switch (LSL 1000) at elevation of -4.50 ft NAVD88. The lead pump will turn off when the water surface elevation reaches the pumps off float switch (LSLL 1000) at elevation -9.50 ft NAVD88. A low-level alarm will be activated if the water surface elevation reaches the LSLL 1000 float switch.
   b. The lag pump will start when the water surface elevation reaches the lag pump on float switch (LS 1000) at elevation of -4.00 ft NAVD88. A high-level alarm will be activated if the water surface elevation reaches the LSH 1000 float switch.
   c. The lead/lag pumping sequence may be set to rotate after each pump start/stop, every 24 hours at a selected time, or may be selected manually.

B. Control:

1. Local:

   a. The pressure detection switches (PSH 1011 and PSH 1012), moisture detection switches (MSH 1011 and MSH 1012), and high motor winding temperature switches (TSH 1011 and TSH 1012) shall be wired to their respective pump control panel. If any of these conditions occurs and persists through a time delay, the lead pump shall be stopped and the lag pump shall start.
   b. The limit switches (ZSC 1011 and ZSC 1012) shall be wired to their respective pump control panel. If a pump starts and the the limit switch does not show the check valve is open after an operator adjustable time delay setpoint (initially set at 10 seconds), a low flow alarm shall be triggered.
   c. Hand/Off/Auto selector at the pump control panel.

2. Pump Control Panel:

   a. Pumping sequence Auto/Manual mode selector.
   b. Pumping sequence selector.
   c. Start/stop selector for manual override.

C. Alarms / Monitoring:

1. Local:

   a. Pump running.
   b. Pump fault alarm.
   c. Pump high discharge pressure alarm.
   d. Pump high temperature alarm.

e. Pump moisture detection alarm
f. Pump low flow alarm.
g. Pump station flow will be monitored by FE/FIT 1030 (Refer to Drawing I-2).
h. Wet Well high level alarm.
i. Wet Well low level alarm.

2. Remote: See Drawing I-2 for remote outputs to the RTU/SCADA.

2.7 GUIDE RAILS AND PUMP LIFTING DEVICE

A. Pumping Station: Furnish with necessary, stainless steel upper guide holder and level sensor cable holder.

B. Lower Guide Holders: Integral with discharge connection.

1. Dual guide rails: Schedule 40, welded two-inch minimum diameter, Type 316 stainless steel pipe of length as required by Drawings.
2. Single guide rails and guide cables are not acceptable.

C. Intermediate Guide Brackets: Furnished and installed.

1. Unsupported Guide Rails: No longer than 20 feet, Type 316 stainless steel.

D. Cable Holders Including Cable Hooks: Fabricated from Type 316 stainless steel plate.

1. No sharp corners or edges that would abrade or cut electrical cable insulation.
2. Cable Holders: Sufficient length and strength to support each separate cable.
3. Pump power and lift cables may use the same hook position, provided cables do not foul one another and lift cable is easily accessed from hatch opening.

E. Chain and Latch Device: To facilitate pump removal from wet well without a series of incremental lifts. Design device to be lowered along guide rails and remotely latch to pump lifting bail without requiring wet well entry.

2.8 SHOP PAINTING

A. Pump and Associated Equipment: Shop-primed and finished-coated per Manufacturer's standard practice prior to shipment. Color: Manufacturer’s standard.

1. Touch-Up Paint: Supplied by Manufacturer.

B. Interior and Exterior Pump Surfaces, Motor Enclosure and Exterior and Interior of Cooling Jacket: Supplied with Manufacturer’s standard epoxy coatings. Cleaned, dry, free of rust, mill scale, grease, dirt, and other foreign matter.

C. Nameplates: Protect during painting.

2.9 SOURCE QUALITY CONTROL

A. Factory Pump Testing: Performed by Manufacturer.

1. Test pumps as described in ANSI/HI 14.6, American National Standard for Rotodynamic Pumps for Hydraulic Performance Acceptance Tests, as specified.

    a. Submit for approval by Engineer the proposed pump factory test plan ten days prior to factory test. Engineer to review in writing prior to testing. Include milestone schedule; factory inspection, testing, shipping, and job site delivery.

2. Perform hydrostatic test on pressure-containing components per ANSI/HI 11.6 on pumps prior to shipment.
3. Examine cast surfaces of components by visual inspection per MSS SP-55.
4. Factory pump tests are the basis of acceptance of hydraulic performance of pumps.

    a. Factory test pumps prior to shipment per Hydraulic Institute standards.
    b. Test and Record: Flow rate, total head, overall efficiency and input KW for at least five points on pump performance curve.

        1) Perform test to demonstrate pumps meet ANSI/HI 14.6, acceptance grade 1U for specified (intermediate) design point and acceptance grade 1E for the other specified points except that maximum pump power input at any point on the pump curve is to be limited to the nameplate Brake Horsepower rating of the motor size specified in “Conditions of Operation” Article in Part 2.
        2) Include the points specified in “Conditions of Operation” Article in Part 2.

    c. Pumps failing to meet specification requirements are required to be modified to meet specification requirements. If reasonable attempts to correct inefficiencies are unsuccessful, replace pumps with units meeting specified requirements.

5. Certified Pump Performance Curves: Submit test data to Engineer for approval prior to shipment. Include total head, flow rate, overall efficiency and total brake horsepower for each pump supplied.
6. If Manufacturer does not have historical test records for NPSH3 at specified design pump speed, test one pump to demonstrate NPSH3 versus flow rate.
7. Meters, Gauges, and Other Test Instruments: Calibrated within manufacturer's established time period prior to scheduled test.

    a. Provide calibration certification data.
    b. If Manufacturer has no ISO standard calibration period, Hydraulic Institute Standards governs.

8. Test pumps at 100 percent of design speed. Determine reduced speed curves using affinity laws.
9. Test pumps through specified range of flow, and head/flow rate/ efficiency curves plotted at maximum output speed.

    a. During each test, run pumps at each head condition for sufficient time to accurately determine flow rate, head, power input, and efficiency.
    b. Determine the overall efficiency at each test point.
    c. Modify pumps under test until specified conditions are met or replace with pumps meeting specified conditions.

10. All pumps are to receive a non-witness factory test.
11. Manufacturer to perform the following test pumps prior to shipment from factory:

    a. Megger motors and pumps for insulation breaks or moisture.
    b. Prior to submergence, pumps to be run dry and checked for correct rotation.
    c. Run pumps for 30 minutes in a submerged condition.
    d. Pump shall be removed from test tank, metered immediately for moisture. Check upper and lower seal units for water intrusion.
    e. Submit for Approval Prior to Shipment: A written certified test report regarding above tests.

PART 3 - EXECUTION

3.1 PREPARATION

A. Take necessary field measurements. Determine exact dimensions for Work and required sizes of equipment under this Contract. Verify all pertinent data and dimensions.

3.2 INSTALLATION

A. Install equipment per Manufacturer's instructions and recommendations in locations shown on Drawings.

B. General: Unless instructed otherwise by Manufacturer's instructions.

1. Oil and Grease for Initial Operation: Supplied by Contractor.
2. Base Elbows, guiderails, and hoisting equipment for wet pit applications for Pumps: Installed by Contractor conforming to Manufacturer's recommendations and instructions.
3. Anchor Bolts: Set per Manufacturer's recommendations.
4. Pump Seal Against Discharge Connection (wet-pit applications):

    a. Baseplate and Associated Accessories: Installation requirements.

        1) Sole Plates: Install, level and grout per API RP 686, Chapter 5 – Mounting Plate Grouting.
        2) Jacking Bolts: Back off after grouting so they do not support any of the load.
        3) Jacking Bolt Bearing Disks: Placed under each jack bolt.
        4) Plastic Vent Tubes: Spaced as recommended by manufacturer.
        5) Grout: Mix and apply according to manufacturer's directions.
        6) Manufacturer Representative Presence: Is mandatory during pouring of epoxy grout as well as use of rigid non-absorbing formwork and a head box.
        7) Surface of formwork in contact with epoxy grout must be covered with a layer of paste wax to facilitate removal.
        8) Clearance between the concrete surface and bottom surfaces of sole plates to be per Manufacturer's recommendation.
        9) Concrete surface in contact with epoxy grout:

            a) Chipped to present a slightly rough surface and remove the laitance.

b) The surface must then be cleaned of all dust, moisture and oil.
c) Place thin layer of leveling grout under jacking bolt bearing discs.
d) Place Plastic Vent Tubes: Sized and spaced per manufacturer's recommendation, under sole plates to vent air during grouting and prevent voids in epoxy grout.

10) Annular Space Between Anchor Bolts and Anchor Bolt Sleeve: Filled with expanding urethane foam.

a) Threads of anchor and jack bolts in contact with grout to be covered with paste wax and a layer of duct tape.
b) After alignment tolerances are met: Tighten anchor bolts snug to prevent movement during the pour.
c) Epoxy grout is not to extend above the top edge of the sole plates.
d) After the epoxy grout has fully cured, within 24 to 48 hours after pouring, remove jack bolts and tighten anchor bolts tightened to torque levels recommended by Manufacturer.

11) Threaded Jack Bolt Holes: Coat with grease. Clean jack bolts of paste wax and duct tape then reinsert and secure in position with a lock nut to within 1/4-inch of bottom of hole.
12) After grouting, chip and patch edges to present a smooth finish.

C. Upon Completion of Installation for Each Pump Application: Manufacturer shall inspect installation.

1. Satisfactory Inspection: Submit certificate stating equipment installation is satisfactory and meets Manufacturer’s installation, operation and maintenance manuals. State equipment is ready for operation, and operating personnel have been suitably instructed in operation, lubrication and maintenance of each unit.

D. Ensure Proper Installation: If Contractor does not provide qualified installation staff during installations, the Engineer may require Contractor to provide services of Manufacturer's factory representative to give necessary instruction and supervision.

3.3 INSPECTION AND TESTING

A. General:

1. Prior to Shipment from Place of Manufacture: Engineer reserves right to inspect furnished equipment meeting this Section’s specified requirements.
2. Field Tests: Not be conducted until pumping system, including controls, is complete and ready for testing. Systems to be operated in REMOTE at the respective control panel and AUTOMATIC at the SCADA plant control system.

a. Contractor to execute all field tests; manufacturer technician to be on-site for support per manufacturer responsibilities as defined in Paragraph 3.4.

B. Inspection:

1. Manufacturer to furnish services of a representative having complete knowledge of proper operation and maintenance to inspect final installation and supervise test run of equipment.
2. Written Test Procedures: Submit to Engineer for approval 30 days prior to testing.
3. Contractor to furnish water, power, facilities, labor, materials, supplies and test instruments required to conduct field testing.
4. Field Inspection Tests: Demonstrate these Specification requirements have been met by equipment as installed.

    a. Contractor to, at a minimum, verify the following:

        1) Apply electric power to individual components to determine continuity of power supply and signal systems.
        2) Perform pressure and leakage testing on all pressure connections.
        3) Perform dry running tests where possible to confirm rotation and function. Perform a bump test of the motor to verify rotation.
        4) Rotate pump and motor components manually to assure free rotation without evidence of binding.
        5) Quick Release Lift Out: Functions properly allowing pump to be raised and lowered without draining pit. Pumps to be fully removed from equipment access hatches using manufacturer supplied davit cranes.
        6) Pumping units are properly installed and in correct alignment.
        7) Correct lubrication per manufacturer's instructions.
        8) No mechanical defects in any of the parts.
        9) Verify that all monitoring, alarm, and shut-down devices function at correct set point and sequence.
        10) Perform all inspections specified.

5. If pump unit performance does not meet specifications, take corrective measures or remove and replace with pumps which satisfy conditions specified.

C. Functional Testing: Functional testing to be conducted following certification of proper installation and inspections as defined herein. For wet-pit applications, contractor to fill wet well with non-potable plant water (W3) for functional testing. Operate wet-pit pumps continuously for 8 hours. Confirm that pumps operate without overheating or overloading and without objectionable vibration, deliver specified total head and flow rate, and sensors and controls perform satisfactorily as to sequence control, correct start/stop elevations, and proper level alarm functions. Should any pump fail during the functional test, perform repairs/adjustments and initiate new functional testing period.

D. Performance Testing: Performance testing to be conducted following successful completion of Functional Testing, as defined herein. Performance testing to be conducted on all pumping systems operating with design process fluid. Operate pumps continuously for 8 hours. Confirm that pumps operate without overheating or overloading and without objectionable vibration, deliver specified total head and flow rate, and sensors and controls perform satisfactorily as to sequence control, correct start/stop elevations, and proper level alarm functions. Should any pump fail during the performance test, perform repairs/adjustments and initiate new performance testing period.

E. Acceptance Testing: Acceptance testing to be conducted following successful completion of Performance Testing, as defined herein. Final acceptance of the pumps shall be provided upon a

successful 14-day continuous operation. Pump units failing during this period shall be repaired or replaced. Continuous operating period shall then be restarted; resetting run time to zero. All equipment in the respective systems to operate in REMOTE at the respective control panels and AUTOMATIC at the SCADA system.

3.4 MANUFACTURER SERVICES INCLUDING OPERATING INSTRUCTIONS

A. Installation Inspection and Startup:

1. Contractor to include in bid price, providing services of Manufacturer's factory representative having complete knowledge of proper operation and maintenance.

    a. Representative to instruct Owner representatives and Engineer on operation and maintenance.
    b. If there are difficulties in equipment operation due to design or fabrication, additional service to be provided until performance is as specified.
    c. Listed Service Requirements: To be exclusive of travel time and will not limit or relieve Contractor of obligation to provide sufficient service necessary to place equipment in satisfactory and functioning condition.
    d. VFD Training: As specified in Division 26.

2. Installation Inspection: Complete review of installation per Paragraph 3.3.

    a. Written Installation Certification: Installation is complete and operable in all respects, per Manufacturer's information and instructions and no conditions exist which may affect warranty.
    b. Manufacturer to supply installation inspection services of experienced Manufacturer's factory representative to verify proper pump installation.
    c. Manufacturer's factory representative to supervise and approve:

        1) Installation and alignment of pumps with motors.
        2) Grouting.
        3) Alignment of connecting piping and installation of field installed packing or mechanical seal.

    d. Start-Up or Operation Difficulties due to Manufacturer's Design or Fabrication:

        1) Manufacturer to provide additional service until performance is as specified.

    e. Minimum Time On-Site:

        1) Supervise Installation:

            a) One 8-hour day.

        2) Inspect and Approve Installation:

            a) One 8-hour day.

3. Start-Up and Testing:

a. Written Field Report. Summarize test procedures and results. Include tested and measured variables. Show installation meets performance requirements of this specification and project.
b. Tested and Measured Variables: Including but not limited to the following.

1) Flow rates.
2) Total heads.
3) Shaft-speed.
4) Vibration measurements.

c. Minimum Time On-Site: One 8-hour day.

B. Training:

1. Provide classroom and field training with hands-on demonstrations.

a. Develop and submit to Engineer and Owner a training lesson plan. Submit proposed lesson plans for scheduled instruction 30 days prior to the commencement of training. Lesson plans will be approved by Engineer a minimum of 7 days prior to scheduled instruction. Training sessions to be scheduled upon successful completion of Performance Testing, as defined herein.
b. Lesson Plans: Detail specific instruction topic specific to the supplied equipment. Describe "hands-On" demonstrations planned for the instruction, including estimated duration for each training segment.

2. Provide Owner's training including operational and maintenance instruction to two separate operational and maintenance teams over two separate time periods. Give training at times convenient to operational and maintenance teams being trained in coordination with Owner. Accordingly, some training may be conducted during hours outside a normal Monday through Friday, 8:00 a.m. to 4:00 p.m. workday. Include following operational training as a minimum:

a. Theory of operation.
b. Process flow description.
c. Unit capacity and design criteria.
d. Operational troubleshooting and diagnostics procedures.
e. Step-by-step startup and shutdown procedures.
f. System operation and optimization practices.
g. Control set point modification procedures.
h. Overall installed control system to include controls functionality and control panel hardware operation.

3. Minimum maintenance training topics:

a. Step-by-step, "hands-on" assembly and disassembly procedural instructions.
b. Replacement part identification and ordering procedures.
c. Lubrication procedures, including drain-down and refill procedures.
d. Recommended routine maintenance procedures.
e. Troubleshooting and diagnostics procedures.

4. After Completing Training Services: Deliver training materials used by Manufacturer to Owner.
5. Minimum Time On-Site: One 8-hour day.

C. Contractor is solely responsible for the following:

1. Requesting inspection and training services
2. Coordinating requests with other relevant trades.
3. Ensuring effectiveness of Manufacturers' service.
4. Providing professional videography service for one operations and one maintenance training session. Videographer shall be experienced in capturing demonstration and training events similar to those required.
5. If lack of coordination by Contractor results in need to recall Manufacturer’s factory representative, time lost will not be counted against above days.

END OF SECTION 432513

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REPLACEMENT OF SEMINOLE LIFT STATION AND DEMOLITION OF BAYVIEW LIFT STATION

Construction Contract # CN26B004/LR

This Contract made and entered into this _____day of _____20_____, between the City of Titusville, Florida, a municipal corporation of the State of Florida, hereinafter referred to as the "City" or "Owner", and "AMCON Development Group LLC.", with a principal address of 1170 Tree Swallow Drive #337, Winter Springs, FL 32708, hereinafter referred to as the "Contractor".

Whereas, pursuant to all City Purchasing & Contracting policies, statutory requirements, and federal laws applicable, the City has competitively bid and advertised the Work titled "**BID#26B004/LR, Replacement of Seminole Lift Station and Demolition of Bayview Lift Station** "; and,

Whereas, the City desires to engage a licensed, qualified, and experienced Contractor who has special and unique competency in Lift Station and Demolition projects; and,

Whereas, the Contractor represents that it is duly licensed, and it has such competence and experience in providing these services; and,

Whereas, the City in reliance on such representations has selected the Contractor in accordance with the requirements of law; and,

Whereas, at the regular City Council meeting of January 29, 2026, the award of this contract was duly considered and approved; and,

Whereas, the City and the Contractor desire to reduce to writing their understanding and agreements on such.

It is, therefore agreed as follows:

1. **TERM**: This Agreement shall commence on the day it is executed by both parties and the term of the Agreement shall extend until completion of the project.
2. **DESCRIPTION OF WORK:** The Contractor shall furnish all supervision, labor, materials, supplies, tools, equipment and transportation necessary to perform and satisfactorily complete contract work shown on the Drawings and Specifications for this project. In addition, all work shall be performed in accordance with the contract documents, including Addenda (if any) and written modifications issued after execution of this agreement and as

directed by the Project Manager in accordance with the expressed or obvious intent of the Contract hereinafter called Contract Documents, "**BID#26B004/LR, REPLACEMENT OF SEMINOLE LIFT STATION AND DEMOLITION OF BAYVIEW LIFT STATION**". Any Federal, State, or Local regulatory requirements shall apply and be followed by the Contractor and any Subcontractor, to include but not limited to FDOT Specifications for Road & Bridge Construction.

3. **CONTRACT DOCUMENTS:** The Contract Documents on which this agreement between the City and Contractor is based, which contains the plans and specifications in accordance with which the work is to be done, are attached, and incorporated as if fully set out herein and include the following:

   A. The standard solicitation book and specifications titled "**26B004LR Replacement of Seminole Lift Station and Demolition of Bayview Lift Station**", which is attached hereto as **Exhibit 1** and includes the following:

1. Notice to Bidders	2. Non-collusion Affidavit Form
3. Instruction to Bidders	4. Release of Lien (Partial/Final) Form
5. Price proposal Form	6. Bidder Qualification Questionnaire
7. Affidavit	8. General Conditions
9. Scope of Services	10. Specifications/Drawings
11. Public Entity Crime Form	12. Form of Non-Collusion Affidavit
13. Certificate-Contract Execution	14. Foreign Disclosure Form
15. Certification of Bidder Regarding EEO	16. E-Verify
17. Certificate Regarding Debarment Suspension, Ineligibility and Voluntary Exclusion	18. Copy of Business Tax Receipt & State of Florida Registration
19. Certification Regarding Lobbying	20. Scrutinized Companies
21. Drug-Free Workplace Form	22. DEP Contract Certification Form _ **Attachment A** Coronavirus State and Local Fiscal Recovery Funds Special Provisions **Attachment 8**

   B. Plans and specifications as provided by CDM Smith.

   C. Contractor's bid submittal January 5, 2026, attached hereto as Exhibit 2 with all related documents, addenda if any, and other documents listed in the Contract Documents, and written modifications issued after execution of this Contract, if any.

   D. This Construction Contract.

      i. INTENT: The Scope of Work, "Work", is an integrated part of the Contract

Documents and as such do not stand alone if used independently. These documents establish minimum standards of quality for the Contract. The intent of the Contract Documents is to set forth requirements of performance. It is also intended to include all supervision, labor, materials, equipment, tools, and transportation necessary for the proper execution of the Work, to require complete performance of the Work despite omission of specific reference to any minor component part and to include all items necessary for the proper execution and completion of the Work by the Contractor. Performance by the Contractor shall be required only to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the intended results.

ii. ENTIRE AND SOLE AGREEMENT: Except as specifically stated herein, the Contract Documents constitute the entire agreement between the parties and supersede all other agreements, not specifically set forth in the Contract Documents. Neither party has in any way relied, nor shall in any way rely, upon any oral or written agreements, representations, warranties, statements, promises or understandings not specifically set forth in the Contract Documents.

iii. AMENDMENTS: The parties may modify this Contract at any time by written agreement. Neither the Contract Documents nor any term thereof may be changed, waived, discharged, or terminated orally, except by an instrument in writing signed by the party against which enforcement of the change, waiver, discharge, or termination is sought.

4. **COMPENSATION AND PAYMENTS:** For satisfactory performance of the Work, the City will pay the Contractor the total sum of **Four Million, One Hundred Thirty-five Thousand, Seven Hundred, Seventy-four Dollars and Eighty-three cents ($4,135,774.83)**. Payment shall be made for all Work completed by the Contractor during each calendar month which has been accepted by the City and properly documented. Payments shall not be made for Work deemed incomplete or deficient by the City Project Manager. At the end of each month the Contractor shall submit an invoice with supporting documentation of all Work completed for that month, to the Project Manager for approval and payment.

The City shall make partial payments to the Contractor on the basis of a duly certified and approved Pay Application, also referred to as invoice, for the Work performed during the preceding calendar month by the Contractor, **less five percent (5%)** of the amount of such pay application request which is to be retained by the City until all Work has been performed strictly in accordance with the Contract and until such Work has fully been accepted by the City.

When Contract Time is approaching Substantial Completion, a pre-final inspection shall be conducted. Within 30 calendar days after reaching substantial completion, the City shall generate a single list (Punchlist) of items required to render complete, satisfactory, and acceptable the construction services purchased by the City. The Contractor will enter the estimated cost to complete each item on the list and return to the City within ten (10) calendar days. The City reserves the right to modify costs, as deemed reasonable, and finalize the Punchlist within five (5) calendar days.

Within twenty (20) business days after developing the Punchlist, and after receipt of a proper invoice or payment request, the City will pay the Contractor the remaining balance of the Contract, including all remaining retainage withheld by the City pursuant to Section 255.078, Florida Statutes, less an amount equal to one hundred fifty percent (150%) of the estimated cost to complete the items on the list.

Upon the City's acceptance of the Work covered by this Contract and the receipt and acknowledgment by the City of a proper maintenance bond and as built plans, and submission by the Contractor, of evidence satisfactory to the City that all payrolls, material bills, and other costs incurred by the Contractor in connection with the construction of the Work have been paid in full, and also, after all guarantees that may be required are provided, final payment (for retainage duly invoiced) on account of this Contract shall be made within twenty-five (25) days after receipt of a proper pay application request by the City's Project Manager, pursuant to the Prompt Payment Act (Section 218.735 of the Florida Statutes) and all general conditions hereof.

A. **CLAIMS** – Claims arising from changes or revisions made by the Contractor at the City's request shall be presented to the City before Work starts on the changes or revisions. If the Contractor deems that extra compensation is due for Work not covered herein, or in any Supplemental Agreement, the Contractor shall notify the City in writing of its intention to make claim for extra compensation before Work begins on

which the claim is based. If such notification is not given and the City is not afforded by the Contractor a method acceptable to the City for keeping strict account of actual cost, then the Contractor hereby waives its request for such extra compensation. The City is not obligated to pay the Contractor if the City is not notified as described above. The Contractor may refuse to perform the additional Work requested by the City until the parties execute an appropriate Contract change order. Such notice by the Contractor and the fact that the City has kept account of the costs as aforesaid shall not in any way be construed as providing the validity of the claim.

B. **RELEASES** – When it is determined, as a result of a joint inspection of the Work by the Contractor and City, that the Work has been completed in accordance with the terms of the Contract Documents, the completion of the Work shall be certified by the City. At that time, the Contractor may submit the Contractor's final request for payment. Prior to final payment, the Contractor shall execute and deliver to the City a Contractor's Affidavit and Release of Claim for all claims against the City arising under or by virtue of the Contract. Also, from each supplier or subcontractor who has notified the City of their right to file a claim (Notice to City) or who is listed in the Contractor's Affidavit and Release of Claim as an unpaid potential claimant, a Claimant's Sworn Statement of Account, executed by the supplier or subcontractor, must be attached to each request for payment.

The Purchasing & Contracting Administrator shall be the final authority as to the appropriateness of any payment submittal. The Purchasing & Contracting Administrator's decisions on payment matters shall be made in accordance with the word of the contract, City Policy Administrative policy 1-3 Procurement and Contracting, and legal requirements.

C. Appeals – Appeals of the Purchasing & Contracting Administrator's decisions shall be posted as follows:

City Manager
City of Titusville
P.O. Box 2806
Titusville, FL 32781-2806

The Contractor agrees to an administrative hearing within the scope of the contract.

5. CHANGE ORDERS: The City reserves the right to make such changes in the Plans and/or

Specifications within the general scope of the Contract at any time by written Change Order in accordance with the General Conditions of the solicitation book.

The City Manager or designee is authorized to approve Change Order(s) provided that the amount(s) of such Change Order(s) do not increase the authorized contract amount. Furthermore, for any Change Order(s) that will increase the authorized contract amount, the City Manager is authorized to approve, whichever is greater, up to $25,000.00 or ten percent (10%) of the latest contract amount, not to exceed $50,000.00, provided that sufficient budgeted funds are available for this project.

6. **PROJECT SCHEDULE/TIME OF COMPLETION:** The Contractor shall commence Work to be performed under this Contract upon receipt of written Notice to Proceed from the City's Project Manager. The Contractor shall begin the Work and shall fully complete the Work in accordance with the Contract documents within 450 consecutive calendar days after the commencement date stipulated in said written notice and as set forth in the contract award.

The Contractor shall perform all Work under this Contract in a timely manner consistent with the assignment schedules as mutually agreed upon by the City and the Contractor. No extension of time shall be valid unless given in writing by the City. No monetary compensation shall be given for such delay.

A delay beyond the Contractor's control may entitle the Contractor to an extension of time in which to complete the Work as determined by the City provided, however, the Contractor shall immediately give written notice to the City of the cause of such delay. Contract time shall not be extended for "Rain Day" delays. The City will continually monitor the effects of weather and, when found justified, the City will require the Contractor to submit a request for additional time due to the effects of weather. The City will grant time extensions, on a day for day basis, for delays caused by the effects of rains or other inclement weather conditions related adverse soil conditions that prevent the Contract from productively performing controlling items of work resulting in:

1. The Contractor being unable to work at least 50% of the normal workday on pre-determined controlling work items; or
2. The Contractor must make major repairs to work damaged by weather, provided that the damage is not attributable to the Contractor's failure to perform or neglect: and provided that the Contractor was unable to work at least 50% of the normal workday

on pre-determined controlling work items. No additional compensation will be made for delays caused by the effects of inclement weather.

"Rain day" requests must be submitted at the end of each work week or be waived, and the cumulative "rain day" extensions granted shall be processed as a Change Order with each pay submittal.

The City shall have the authority to suspend the Work wholly or in part, for such periods as may be deemed necessary and for whatever cause, by sending written notice of suspension to the Contractor. If the Contractor or the City shall become aware of any condition that may be cause for suspension of the Work, they shall immediately advise the concerned parties of such condition. The Contractor shall not suspend operations under the provisions of this paragraph without the City's written permission. In the event the City suspends the Work, the Contractor shall be granted an extension of time to complete the Work for as many calendar days as the Work was suspended; except that the Contractor will not be granted an extension of time to complete the Work if the suspension was caused by a fault of the Contractor.

7. **LIQUIDATED DAMAGES:** It is mutually agreed that time is of the essence in this Contract and should the Contractor fail to complete the Work within the specified time within the Notice to Proceed, or any authorized extension thereof, there shall be deducted from the compensation otherwise to be paid to the Contractor, and the City will retain the amount of $4135 per consecutive calendar day as fixed, agreed, and liquidated damages for each calendar day elapsing beyond the specified time for completion or any authorized extension thereof, which sum shall represent the actual damages which the City will have sustained by failure of the Contractor to complete the Work within the specified time, it being further agreed that the said sum is not a penalty, but is the stipulated amount of damages sustained by the City in the event of such default by the Contractor.

For the purpose of this Section, the day of final acceptance of the Work shall be considered a day of delay, and the scheduled day of completion of the Work shall be considered a day scheduled for production.

The Contractor shall consider all contingent Work which has to be done by other parties, arising from any cause whatsoever, and shall not plead their want of knowledge of said contingent Work as an excuse for delay in their Work, or for the non-performance.

Permitting the Contractor to continue and finish the Work or any part of it after the

expiration of the number of calendar days allowed for completion or after any extension of time, shall in no way operate as a waiver on the part of the City of its rights under this Contract. In case of default of the Contract and the completion of the Work by the City as hereinafter provided, the Contractor and their Surety shall be liable for the liquidated damages under the Contract; but no liquidated damages shall be assessed for any delay in the final completion of the Work by the City due to any unreasonable action, negligence, omission, or delay of the City.

If any suit for the collection of, or involving the assessment of liquidated damages, the reasonableness of the amounts stipulated in the foregoing calculations shall be presumed. The liquidated damages referred to herein are intended to be and are accumulative and shall be in addition to every other remedy now or hereafter enforceable by law, in equity, by Statute, or under the Contract.

8. **CONTRACTOR'S ACCEPTANCE OF CONDITIONS:** The Contractor hereby agrees that they have carefully examined the surface of the site and has made sufficient tests or other necessary subsurface investigations to fully satisfy themself that such site is a correct and suitable one for this Work and they assume full responsibility therefore. The provisions of this Contract shall control any inconsistent provision contained in the specifications. All Drawings and Specifications have been read and carefully considered by the Contractor, who understands the same and agrees to their sufficiency for the Work to be done. It is expressly agreed that under no circumstances, conditions or situations shall this Contract be more strongly construed against the City than against the Contractor and their Surety.

Any ambiguity or uncertainty in the Drawings or Specifications shall be interpreted and construed by the City's Engineer, and their decision shall be final and binding the Contractor.

It is distinctly understood and agreed that the passing, approval and/or acceptance of any part of the Work or material by the City, its consulting Engineer/Architect or by any agent or representative as in compliance with the terms of the Contract and/or the Drawings, and Specifications covering said Work, shall not operate as a waiver by the City of strict compliance with the terms of this Contract, and/or the Drawings and Specifications covering said Work; and the City may require the Contractor and/or their Surety to repair, replace, restore and/or make to comply strictly with this Contract and the Drawings and Specifications any and all of said Work and/or materials which within a period of one year from and after the date of the passing, approval, and/or acceptance of any such Work or material, are found to be defective or to fail in

any way to comply with this Contract or with the Drawings and Specifications. This provision shall not apply to materials or equipment normally expected to deteriorate or wear out and become subject to normal repair and replacement before their condition is discovered. The Contractor shall not be required to do normal maintenance work under the guaranteed provisions. Failure on the part of the Contractor and/or their Surety, immediately after notice to either, to repair or replace any such defective materials and Workmanship shall entitle the City, if it sees fit, to replace or repair the same and recover the reasonable cost of such replacement and/or repair from the Contractor and/or their surety, who shall in any event be jointly and severally liable to the City for all damage, loss and expense caused to the City by reason of the Contractor's breach of this Contractor and/or their failure to comply strictly with the Contract and with the Drawings and Specifications.

9. **PROJECT MANAGER:** The City shall designate a Project Manager. All Work done shall be subject to the review of the City's Project Manager or designee. Any and all technical questions, which may arise as to the quality and acceptability of materials furnished, work performed or work to be performed, interpretation of the specified requirements and all technical questions as to acceptable fulfillment of the Contract on the part of the Contractor shall be referred to the Project Manager who will resolve such questions.

   The Work shall be subject at all times to review by the City. The City shall be allowed access to all parts of the Work and shall be furnished with such information and assistance by the Contractor as is required to make a complete and detailed review. The City shall not be responsible for the acts or omissions of the Contractor. Any changes to the scope of work or any deviations from the contract documents must be approved in writing through the Project Manager and Purchasing & Contracting Administrator.

10. **CONTRACTOR'S DUTY & PERFORMANCE:** Contractor's services will meet the minimum level of care and skill ordinarily used by members of Contractor's occupation/profession performing the type of services provided herein within the State of Florida.

    Contractor shall supervise and direct the Work, using Contractor's best skill and attention. Contractor shall be solely responsible for and have control over assembly means, methods, techniques, sequences, and procedures, and coordinating all portions of the Work under this Contract, unless the Contract Documents give other specific instructions concerning these matters.

Failure to fully perform to the requirements specified herein in an effective and timely fashion will be unacceptable to the City and upon notice from the Project Manager or designee, the Contractor agrees to implement immediate corrective measures.

Unless otherwise provided in the Contract Documents, Contractor shall provide and pay for labor, materials, equipment, tools, transportation, and other facilities and services necessary for the proper execution and completion of the Work, whether temporary or permanent and whether incorporated or to be incorporated in the Work.

Unless otherwise provided in the Contract Documents, Contractor shall pay all sales, use, and other similar taxes.

Contractor shall hold and maintain at all times during the term of this Contract all federal, state, and local licenses necessary to perform the Work under the Contract.

Cleanup - The Contractor shall at all times keep the premises free from accumulation of waste materials or rubbish caused by its employees or Work. At the completion of the Work, the Contractor shall remove all their rubbish, tools, scaffolding and surplus materials and shall leave the work area "broom clean" or its equivalent, unless more exactly specified, and shall insure that all debris and other unsightly objects are removed and disposed of in a satisfactory manner. At no additional expense to the City, the Contractor will restore to their original conditions or better, as nearly as practicable, those portions of the site not designated for alteration and all such property, structure, utilities, landscaping, etc., disturbed or damaged during the prosecution of the Work. Final payment will be withheld until such clean up and repairs are completed.

The Work will be considered complete only after all debris and unused material due to or connected with the Work have been removed and the surrounding area left in a condition satisfactory to the City. In the event the City finds that the Contractor has not complied in keeping the job site clean, the City may, after twenty-four (24) hours written notice to the Contractor to correct the situation, elect to have the job site cleaned by an independent labor force. The cost of cleaning by said independent labor force shall be deducted from the monies due the Contractor.

11. **CONTRACTOR'S RESPONSIBILITY FOR WORK:** Until acceptance of Work by the City, the Work shall be under the charge and care of the Contractor, and Contractor shall take every necessary precaution against damage to the Work by action of the elements or from any other cause whatsoever, whether arising from execution or from the non-execution of the Work. The Contractor shall reprint, repair, restore, and make good, without additional compensation, all

damage to any portion of the Work occasioned by any cause, other than the sole and active negligence of the City, before its completion and acceptance.

Materials and equipment shall be stored so as to incur the preservation of their quality and fitness for the Work. When considered necessary, they shall be placed on wooden platforms or other hard clean surfaces, and not on the ground, and/or they shall be placed under cover. Stored materials and equipment shall be located so as to facilitate prompt inspection.

12. UNCONTROLLABLE CIRCUMSTANCES ("FORCE MAJEURE"):

Contractor shall not be subject to any liability for failure to carry out any of the terms of this Contract to the extent that such failure shall be due to a Force Majeure event, as defined herein. Contractor shall not be relieved from liability for failures that are due to a Force Majeure event that could have been reasonably foreseen and guarded against so as to avoid or reduce the adverse impact of such event. Force Majeure includes but is not limited to any of the following if reasonably beyond the control of the Contractor claiming Force Majeure: (a) the operation and effect of rules, regulations, or orders promulgated by any commission, county, municipality, or governmental agency of the state of Florida or the United States, (b) a restraining order, injunction, or similar decree of any court of competent jurisdiction, (c) war, (d) flood, (e) earthquake, (f) fire, (g) severe wind storm, (h) acts of public disturbance, (i) quarantine restrictions, (j) epidemics, (k) strikes, (l) freight embargoes, or (m) sabotage, or any other cause (whether or not of kinds specifically mentioned herein) that is not reasonably within the control of the Contractor claiming Force Majeure. Contractor shall be entitled only to extensions of the Contract Time as the sole and exclusive remedy for such resulting delay, in accordance with and to the extent specifically provided above.

13. SUBCONTRACTS AND ASSIGNABILITY: The Contractor shall not assign any interest in the Contract and shall not transfer any interest in the same without the prior written consent of the City. Any subcontracts or other work which is performed by persons or firms other than the Contractor under this Contract or any work orders shall have prior written approval of the City. Any subcontracts, outside associates, or other Contractors required by the Contractor in connection with services covered by this Contract must be specifically approved by the City, thereby:

A. Approval will be given only after the Surety on the Contract Bond has informed the

City in writing that it approves of such assignment being made.

B. In the event the Contractor shall undertake to assign all or any part of any monies due or to become due under the Contract, the instrument of assignment shall contain a provision substantially to the effect that it is agreed that the right of the assignee in and to any of such monies shall be subject to the prior liens of all persons for services rendered or materials supplied for the performance of all Work embraced by the Contract.

14. <u>INDEPENDENT CONTRACTOR:</u> Contractor is an independent contractor. Neither Contractor nor Contractor's employees are employees of the City. Contractor shall have the right to control and direct the means and methods by which the Work is accomplished. Contractor may perform services for others, which solely utilize Contractor's facilities and do not violate any confidentiality requirements of this Contract. Contractor is solely responsible for compliance with all labor and tax laws pertaining to Contractor, its officers, agents, and employees, and shall indemnify and hold the City harmless from any failure to comply with such laws. Contractor's duties with respect to Contractor, its officers, agents, and employees, shall include, but limited to:

a. Providing Worker's Compensation coverage for employees as required by law; and
b. Hiring of any employees, assistants, or subcontractors necessary for performance of the Work; and
c. Providing any and all employment benefits, including, but not limited to, annual leave, sick leave, paid holidays, health insurance, retirement benefits, and disability insurance; and
d. Payment of all federal, state, and local taxes income, or employment taxes, if Contractor is not a corporation, self-employment, Social Security taxes; and
e. Compliance with the Fair Labor Standards Act, 29U.S.C. §§201. Et. Seq., including payment of overtime in accordance with the requirements od said Act; and
f. Providing employee training for all functions necessary for performance of the Work; and
g. Providing equipment and materials necessary to the performance of the Work; and
h. Providing office or other facilities for the performance of the Work.

In the event the City provides training, equipment, materials, or facilities or otherwise facilitates performance of the Work, this shall not affect any of the Contractor's duties hereunder or alter Contractor's status as an independent contractor.

15. PROTECTION OF PERSON AND PROPERTY: The Contractor shall exercise precaution at all times for the protection of persons and property. The Contractor and all subcontractors shall strictly comply with all safety provisions of all applicable laws and ordinances and shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the Work in accordance with the U.S. Department of Labor Occupational Safety and Health Act and the laws of the State of Florida. Failure to comply with the Act constitutes a failure to perform on behalf of the Contractor. This Contract requires that the Contractor and any subcontractors hired by the Contractor agree to reimburse the City for any fines and/or court cost arising from penalties charged to the City for violations of OSHA committed by the Contractor or any subcontractor.

The Contractor shall take all reasonable precautions for the safety of, and shall provide all reasonable protection to prevent damage, injury or lost to, all employees on the Work and all other persons who may be affected thereby; all the Work materials and equipment to be incorporated therein, whether in storage on or off the project site or adjacent thereto, including vehicles and equipment therein, trees, shrubs, lawn, walks, pavements, structures, and utilities including, but not limited to, fire hydrants, swales, gutters, sewer inlets, drainage ditches, etc. Contractor shall insure that its contract Work does not impair the proper functioning of these utilities.

The Contractor shall perform any Work and shall furnish and install materials and equipment necessary during an emergency endangering life or property. In all cases, the Contractor shall notify the City Project Manager of the emergency as soon as practicable but shall not wait for instruction before proceeding to properly protect both life and property.

The City has the right to order the Contractor to discontinue hazardous work practices upon verbal or written notice. It is required that the Contractor keep and maintain all necessary protective devices in place and in proper condition at all times where Work is being performed, to prevent injury to person or damage to public or private property.

The Contractor shall be held responsible for such safety and protection until final written acceptance of the Work is issued by the City.

16. INDEMNIFICATION & INSURANCE:

A. **INDEMNIFICATION** - The Contractor shall indemnify, save harmless and defend the City and all of its officers, agents, and employees from all claims, actions or suits, including

reasonable attorney's fees, because of any injury or damage sustained by any person or property because of the said Contractor's operations relating to this contract; or because of or in consequence of any neglect causing bodily injury, illness, or death, or property damage; or through the use of unacceptable materials in constructing the Work; or on account of or in consequence of any neglect in safeguarding the work; or because of any act or omission by said Contractor or that of a subcontractor, or anyone employed by them, or for whose acts Contractor or a subcontractor may be liable; or because of any claims or amounts recovered from any infringement or patent, trademark or copyright; or from any claims or amounts arising or recovered under Workers Compensation Law or any other laws.

Should the Contractor fail to maintain adequate protection for the City a portion of the money due the Contractor under the Contract, as may be considered necessary by the Purchasing & Contracting Administrator, may be retained for use by the City to address all such claims. In case no money is due, the Contractor's Surety shall be held until such suit(s), action(s), or claim(s) for damage(s) or injury(ies) as aforesaid, shall have been settled and suitable evidence to that effect furnished to the Purchasing & Contracting Administrator. The exception being that money due the Contractor will not be withheld under this provision when the Contractor produces satisfactory evidence that he has, in the opinion of the City, adequate insurance coverage.

The Contractor guarantees the payments of all just claims for materials, supplies, tools, labor, and other just claims against him or any subcontractor in connection with this Contract. The Contractor's bond will not be released by final acceptance and payment by the City unless all such claims are paid or released. Final waivers of liens for all subcontractors shall be provided to the Purchasing & Contracting Administrator in a timely manner after request for a final inspection.

B. **INSURANCE** - The Contractor shall not commence Work under this Contract until he has obtained and provided insurance specified in the Contract Documents and in such amounts that will provide adequate protection to the City and the Contractor against all Liabilities, damages, and accidents, nor shall Contractor commence Work until such insurance has been approved by the City. The Contractor shall not allow any Subcontractor to commence on their subcontract until all insurance required of the subcontract has been obtained and approved in the same manner. Neither the approval by the City nor a failure to disapprove

insurance furnished by the Contractor or Subcontractor release the Contractor or Subcontractor of full responsibility for liability, damages, or accidents.

The Contractor and each Subcontractor shall maintain such required insurance during the life of the Contract, and no modification or change of insurance coverage and/or provision shall be made without thirty (30) days advance notice to the City. Coverage shall be as follows:

1) Commercial General Liability Insurance coverage on an occurrence basis in the minimum amount of $1,000,000 per occurrence and $2,000,000 policy aggregate (defense cost shall be in excess of the limit of liability). Coverage shall include premises and operations, products and completed operations, personal injury and advertising liability and medical payments. The City shall be named as an Additional Insured.
2) Auto Liability Insurance, covering all vehicles, owned or otherwise, used in connection with this contract, with a minimum combined single limit of $1,000,000, including hired and non-owned liability and $25,000 medical payment.
3) Workers' Compensation and Employers Liability Insurance Workers Compensation insurance providing statutory benefits as required in the State of Florida. The Contractor shall require any subcontractor(s) to provide evidence of this coverage. Workers' Compensation exemption forms are only accepted for independent contractors and sole proprietorships that perform the work or services required of the City themselves, they shall not have employees or sub-contract the work to other entities or individuals. Additionally, if the contract requires working on or around a navigable waterway, the Contractor and all subcontractors shall provide evidence of United States Longshoremen's and Harbor Workers (USL&H) coverage and contingent coverage of Jones Act (Marine Employers Liability) in compliance with Federal statutes or proof of exemption. The Contractor shall be responsible for compliance with these requirements by each subcontractor, Contractor or supplier when applicable. All workers' compensation policies must include coverage for employer liability of $500,000 for each accident and each disease.
4) In the event that the contract involves professional or consulting services, in addition to the aforementioned insurance requirements, the Contractor shall also be protected by a Professional Liability Insurance Policy (Errors and omissions, Directors and Officers, Architect and Engineers, Etc.) in the amount of $2,000,000 per claim.

5) In the event the contract involves services related to construction projects, the Contractor shall also procure and maintain a Builders Risk Insurance Policy or Installation Floater with loss limits equal to the value of the construction project.

6) In addition to the above, Specialty Insurance policies covering specific risks of loss (including but not limited to, for example; Longshore coverage, Crane and Rigging, Inland Marine, etc.) may be required by City Risk Management. Any additional specialty insurance coverage requirement will be dictated by the specific goods, products or services provided under the subject contract and insurance underwriting standards, practices, procedures or products available in the commercial insurance market at the time of the contract inception. The Contractor is required to procure and maintain all such specialty coverage in accordance with prudent business practices within the Contractors industry.

The awarded Contractor shall have five (5) days to provide certificates of insurance to the City Purchasing and Contracting Division demonstrating that the aforementioned insurance requirements have been met prior to the commencement of Work under this contract. The certificate(s) of insurance (COI) shall indicate that the policies have been endorsed to cover the City as an additional insured (a waiver of subrogation in lieu of additional insured status on the workers' compensation policy is acceptable) and that these policies may not be canceled or modified without thirty (30) days prior written notice to the City. The insurance coverage enumerated above constitutes the minimum requirements and shall in no way lessen or limit the liability of the Contractor under the terms of the contract. Subcontractor's insurance shall be the responsibility of the Contractor.

17. BONDS:

A. **PERFORMANCE AND PAYMENT BONDS** – Pursuant to stipulations hereto, a performance and payment bond, on the prescribed form and equal to 100% of the contract amount will be required for this Contract prior to any commencement of Work.

B. **MAINTENANCE BOND** – A maintenance bond, equal to ten percent (10%) of the final contract amount will be required pursuant to the Contract Documents.

C. **ADDITIONAL BONDS** – It is further agreed between the parties hereto, that if at any time after the execution of this Contract and the Performance Bond hereto attached for its faithful performance, the City shall deem the surety or sureties upon such bond to be unsatisfactory,

or if, for any reason, such bond ceases to be adequate to cover the performance of the Work, within five (5) days after receipt of notice from the City to do so, the Contractor shall, at their own expense, furnish an additional bond or bonds in such form and amount, and with such surety or sureties as shall be satisfactory to the City.

18. **GENERAL PERSONNEL:** The Contractor represents that it will secure at its own expense all personnel and subcontractors required for services, which are necessary to complete the Work as described in this Contract. All services under this Contract shall be performed by the Contractor or subcontractor and all persons engaged in work under the Contract shall be qualified to perform such services and authorized under federal, state, and local laws to perform such services. Personnel who perform services under this Contract shall not be employees of the City.

All workers must have sufficient knowledge, skill, and experience to perform properly the work assigned to them. Any worker including supervisors, employed by the Contractor or subcontractor who, in the opinion of the City does not perform Work under this Contract in a skillful manner, or appears to be incompetent or to act in a disorderly or intemperate manner shall, at the written request of the City, be discharged immediately and shall not be employed again in any portion or the Work without the approval of the City.

The Contractor shall at all times be responsible for the conduct and discipline of their employees and/or any subcontractor or persons employed by subcontractors. The Contractor shall provide a current listing of names and license numbers of all personnel executing Work related to this contract. This listing shall be updated by the Contractor within three days of a personnel change.

19. **EQUAL OPPORTUNITY EMPLOYER:** The City is an Equal Opportunity Employer (EOE) and as such encourages all contractors to voluntarily comply with EOE regulations with regards to gender, age, race, veteran status, country of origin, and creed. Any subcontracts the Contractor may enter into shall make reference to this clause with the same degree of application being encountered. When applicable the Contractor shall comply with all State or Federal EOE regulations.

20. **DRUG-FREE WORKPLACE:** The City of Titusville encourages all contractors to maintain a drug-free workplace program in accordance with Section 287.087 of the Florida Statutes.

21. **PUBLIC ENTITY CRIME:**

The Contractor shall file a sworn statement with the City, which is provided under Contract Forms, stating whether a person or affiliate as defined in Section 287.133(1), Florida Statutes, has been convicted of a public entity crime subsequent to October 1, 1989, in accordance with the provisions of Section 287.133 of the Florida Statutes.

22. <u>E-VERIFY:</u> As a condition precedent to entering into a Contract as a result of this bid/proposal, and in compliance with Section 448.095, Florida Statutes, Contractor, and its subcontractors shall, register with and use the E-Verify system to verify work authorization status of all employees hired after January 2, 2021.

1) The City shall not enter into, or renew, a contract with a Contractor that is not enrolled in E-Verify. Any Contractor that has a contract with the City shall be contractually obligated to utilize E-Verify to confirm the employment eligibility of any employee hired during the contract term. The Contractor shall provide the City acceptable evidence of their enrollment at time of execution of the contract or renewal. Acceptable evidence shall include, but not be limited to, a copy of the fully executed E-Verify Memorandum of Understanding for the Business.
2) Contractor shall require of its subcontractors to provide Contractor with an affidavit stating that the subcontractor does not employ, contract with, or subcontract with an unauthorized alien. Contractor shall maintain a copy of the subcontractor's affidavit as part of and pursuant to the records retention requirements of this Contract.
3) The City, Contractor, or any subcontractor who has a good faith belief that a person or entity with which it is contracting has knowingly violated Section 448.09(1), Florida Statute or the provision of this section shall terminate the contract with the person or entity.
4) The City, upon good faith belief that a subcontractor knowingly violated the provisions of this section, but Contractor otherwise complied, shall promptly notify Contractor and Contractor shall immediately terminate the contract with the subcontractor.
5) A contract terminated under the provisions of this section is not a breach of contract and may not be considered such. Any contract termination under the provisions of this section may be challenged pursuant to Section 448.095(2)(d), Florida Statute. Contractor acknowledges that upon termination of this Contract by the City for a violation of this section by Contractor, Contractor may not be awarded a public Contract for at least one

(1) year. Contractor further acknowledges that Contractor is liable for any additional costs incurred by the City as a result of termination of any contract for a violation of this section.

6) Subcontracts: Contractor or subcontractor shall insert in any subcontracts the clauses set forth in this section, including this subsection, requiring the subcontractors to include these clauses in any lower tier subcontracts. Contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in this section.

23. PROHIBITED TELECOMMUNICATIONS EQUIPMENT: Contractor represents and certifies that it and its applicable subcontractors do not and will not use any equipment, system, or services that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system, as such terms are used in 48 CFR § 52.204-24 through 52.204-26. By executing this Contract, Contractor represents and certifies that Contractor and its applicable subcontractors must not provide or use such covered telecommunications equipment, system, or services for any scope of work performed for the City for the entire duration of this Contract. If Contractor is notified of any use or provisions of such covered telecommunications equipment, system, or services by a subcontractor at any tier or by any other source, Contractor must promptly report the information in 40 CFR § 52.204-25(d)(2) to City.

24. SCRUTINIZED COMPANIES: Section 287.135, Florida Statutes, prohibit state agencies departments, and local government entities from contracting with Scrutinized Companies. Contractor and Subcontractor(s) shall complete the Affidavit form provided in the bid/proposal booklet and hereby incorporated as part of the Contract Documents. Contractor and Subcontractor shall affirm not to be on the Scrutinized Companies with Activities in Sudan List, or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List created pursuant to s. 215.473, Florida Statutes, nor have business operations in Cuba or Syria and are not on the Scrutinized Companies that Boycott Israel List, created pursuant to Section 215.4725, Florida Statutes or participating in a boycott of Israel. The Contractor or Subcontractor further acknowledges and agrees that the City may immediately terminate this Contract and any subsequent renewal Contract for cause if the Contractor or Subcontractor is found to have

submitted a false certification or if the Contractor or Subcontractor is placed on the Scrutinized Companies with Activities in Sudan List, the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, or the Scrutinized Companies that Boycott Israel List, or is engaged in a boycott of Israel during the Term of the Contract. Further, the Contractor or Subcontractor acknowledges and agrees that a false certification or representation hereunder is a material breach of this Contract, and the Contract shall be terminated by the City if the Contractor or Subcontractor and any actively contracted company for the Contractor or Subcontractor is found to have been placed on the Scrutinized Companies that Boycott Israel List or is engaged in a boycott of Israel.

25. ANTI-DISCRIMINATION: Contractor for itself, its personal representatives, successors in interests, assigns, subcontractors, and sub-leases, as a part of the consideration hereof—hereby covenants and agrees that:

A. No person on the grounds of race, color, religion, sex, national origin, age, marital status, political affiliation, familial status, disability, sexual orientation, pregnancy, or gender identity, expression or veteran or service member status be excluded from participation in, denied the benefits of, or be otherwise subjected to discrimination in the use of or performance of services described herein; and

B. No Employee or applicant for employment on the ground of race, color, religion, sex, national origin, age, marital status, political affiliation, familial status, disability, sexual orientation, pregnancy, gender identity or expression, or veteran or service member status will be discriminated against during the course of employment or application for employment to be employed in the performance of this Contract with respect to hiring, tenure, terms, conditions or privileges of employment, or any matter directly or indirectly related to performance of this Contract.

26. DISCRIMINATORY VENDOR LIST: Contractor hereby acknowledges its continuous duty to disclose to the City if the Contractor or any of its affiliates, as defined by Section 287.134(1)(a), Florida Statutes, are placed on the Discriminatory Vendor List. Pursuant to Section 287.134(2)(a),Florida Statutes: "An entity or affiliate who has been placed on the discriminatory vendor list may not submit a bid, proposal, or reply on a contract to provide any goods or services to a public entity; may not submit a bid, proposal, or reply on a contract with a public entity for

the construction or repair of a public building or public work; may not submit bids, proposals, or replies on leases of real property to a public entity; may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity; and may not transact business with any public entity."

27. GRATUITIES AND KICKBACKS:

A. **GRATUITIES**

It is unethical for any person to offer, give, or agree to give any employee or for any employee to solicit, demand, accept or agree to accept from another person, a gratuity or an offer of employment in connection with any decision, approval, disapproval, recommendation, preparation of any part of program requirement or a purchase request, influencing the content of any specification or procurement standard, rendering of advice, investigation, audit, or in any other advisory capacity in any proceeding or application, request for ruling, determination claim or controversy, or other particular matter, pertaining to any program requirement or a Contract or subcontract, or to any solicitation or proposal therefore.

B. **KICKBACKS**

It must be unethical for any payment, gratuity, or offer of employment to be made by or on behalf of a Sub-contractor under a Contract to Contractor or higher tier sub-contractor any person associated therewith, as an inducement of the award of a subcontract or order.

C. **CONTRACT CLAUSE**

The prohibition against gratuities and kickbacks prescribed in this section must be conspicuously set forth in every Contract and subcontract and solicitation, therefore.

28. FOREIGN GIFTS AND CONTRACTS: The Contractor must comply with any applicable disclosure requirements in Section 286.101, Florida Statutes. Pursuant to Section 268.101(7)(b), Florida Statutes: "In addition to any fine assessed under Florida Statutes 286.101(7)(a), a final order determining a third or subsequent violation by an entity other than a state agency or political subdivision must automatically disqualify the entity from eligibility for any grant or contract funded by a state agency or any political subdivision until such ineligibility is lifted by the Administration Commission.

29. ANTITRUST VIOLATIONS; DENIAL OR REVOCATION: Pursuant to Section 287.137, Florida Statutes, as may be amended, a person or an affiliate who has been placed on the antitrust

violator vendor list (electronically published and updated quarterly by the State of Florida) following a conviction or being held civilly liable for an antitrust violation may not submit a bid, proposal, or reply for any new contract to provide any goods or services to a public entity; may not submit a bid, proposal, or reply for a new contract with a public entity for the construction or repair of a public building or public work; may not submit a bid, proposal, or reply on new leases of real property to a public entity; may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a new contract with a public entity; and may not transact new business with a public entity. By entering this Contract, Contractor certifies neither it nor its affiliate(s) are on the antitrust violator vendor list at the time of entering this Contract. False certification under this paragraph or being subsequently added to that list will result in termination of this Contract, at the option of the City consistent with Section 287.137, Florida Statutes, as amended.

30. <u>ENVIRONMENTAL AND SOCIAL GOVERNMENT AND CORPORATE ACTIVISM:</u>

Pursuant to Florida Statute 287.05701, local governments cannot give preference to a contractor based on social, political or ideological interests such as those listed directly below. Contractors are also prohibited from giving preference to subcontractors based on the below listed factors. Violations will result in termination of this Contract and may result in administrative sanctions and penalties by the Office of the Attorney General of the State of Florida.

List of Prohibited Preference Factors:

A. The Contractor's political opinions, speech, or affiliations.
B. The Contractor's religious beliefs, religious exercise, or religious affiliations.
C. The Contractor's lawful ownership of a firearm.
D. The Contractor's engagement in the lawful manufacture, distribution, sale, purchase, or use of firearms or ammunition.
E. The Contractor's engagement in the exploration, production, utilization, transportation, sale, or manufacture of fossil fuel-based energy, timber, mining, or agriculture.
F. The Contractor's support of the state or Federal Government in combatting illegal immigration, drug trafficking, or human trafficking.

G. The Contractor's engagement with, facilitation of, employment by, support of, business relationship with, representation of, or advocacy for any person described in this paragraph.

H. The Contractor's failure to meet or commit to meet, or expected failure to meet, any of the following as long as such Contractor is in compliance with applicable state or federal law:

1. Environmental standards, including emissions standards, benchmarks, requirements, or disclosures;
2. Social governance standards, benchmarks, or
3. requirements, including, but not limited to, environmental or social justice;
4. Corporate board or company employment composition standards, benchmarks, requirements, or disclosures based on characteristics protected under the Florida Civil Rights Act of 1992; or
5. Policies or procedures requiring or encouraging employee participation in social justice programming, including, but not limited to, diversity, equity, or inclusion training.

31. NON-APPROPRIATIONS: This Contract will remain in full force and effect only as long as the expenditures provided for the Contract have been appropriated by the City Council in the annual budget for each fiscal year of the Contract, and is subject to termination without penalty if funding is not appropriated.

32. SEVERABILITY: If any clause or provision of this contract is found illegal, invalid, or unenforceable under present or future laws effective during the Term of this Contract, then and only in that event, it shall be the intention of the parties that the remainder of this Contract, and the Term covered thereby, shall not be affected. All rights, powers, and privileges conferred by this Contract upon the Parties shall be cumulative but not restricted to those given by law.

33. TERMINATION:

A. **TERMINATION FOR CAUSE:** The Contract may be terminated by the City for cause in the event of any breach hereof, including but not limited to, Contractor's:

1. Failing to carry forward and complete Work in accordance with the requirements hereof; or

2. Failing to comply with applicable laws, regulations, permits, or ordinances'; or
3. Failing to timely commence or continuously and vigorously pursue correction of defective Work; or
4. Making a general assignment for the benefit of its creditors; or
5. Having receiver appointed because of insolvency; or
6. Filing bankruptcy or having a petition for involuntary bankruptcy filed against it; or
7. Failing to make prompt payments, when properly due, to subcontractors, vendors, or others for materials or labor used in the Work; or
8. Making material misrepresentation to the City regarding Work or performance thereof.

The City shall provide Contractor with written notice of its intention to terminate this Contract for cause, which shall provide the effective date of the termination. Such notice shall state the nature of the deficiency and, at the City's sole judgment and discretion, may afford Contractor an opportunity to correct said deficiency, in which event the notice shall specify the time allowed to cure said deficiency. If the deficiency has not been corrected within the time allotted, the City may take possession of the Work and finish the Work by whatever method(s) the City deems expedient. In such case, Contractor shall not be entitled to receive any further payment until the Work is completed and accepted by the City. If the unpaid balance of the total compensation exceeds the expense of completing Work, including compensation for additional managerial and administrative services, the excess will be paid to Contractor. If the expense exceeds the unpaid balance, Contractor shall pay the difference to the City. The expense incurred by the City and the damage incurred through Contractor's default will be certified by the City.

B. **TERMINATION FOR CONVENIENCE:** Notwithstanding any other provision of this Contract, the City may terminate this Contract, or any Work issued under it, in whole or in part, at any time, with or without cause, upon ten (10) days written notice to the Contractor.

Upon receiving notice of termination, the Contractor shall discontinue the Work on the date and to the extent specified in the notice and shall place no further orders for materials, equipment, services, or facilities except as needed to continue any portion of the Work that was not terminated. The Contractor shall also make every reasonable effort to

cancel, upon terms satisfactory to the City, all orders or subcontracts related to the terminated Work.

In the event of such termination, the Contractor shall be compensated for any Work performed prior to the date of the termination and for materials that were ordered prior to the receipt of notice of termination that cannot be returned to the vendor. Any such materials shall become the property of the City. Contractor waives all claims for compensation in excess of that which is specially provided for herein, including but not limited to, loss of anticipated profits; idle equipment, labor, facilities; and claims of subcontractors and vendors.

C. **BANKRUPTCY:** If the Contractor shall be adjudged bankrupt; or if it should make a general assignment for the benefit of its creditors; or if a receiver should be appointed for the Contractor or any of their property; or if it should persistently or repeatedly refuse or fail to make prompt payment to a person(s) supplying labor or materials for the Work under the Contract; or persistently disregard instructions of the Purchasing & Contracting Administrator; or fail to observe or perform any provisions of the Contract Documents; or otherwise be guilty of a substantial violation of any provisions of the Contract Documents, the City may – by at least ten (10) days prior written notice to the Contractor – without prejudice to any other rights or remedies of the City under the Contract, terminate the Contractor's right to proceed with the Work. In such event, the City may take over the Work and proceed with same to completion – by Contract or otherwise – and the Contractor and its Sureties shall be liable to the City for any excess cost incurred by the City. In such case, the City may take possession of and utilize in completing the Work, such necessary materials, appliances, and plant as may be on the site of the Project. The foregoing provisions are in addition to, and not in limitation of, the right of the City under any other provisions of the Contract Documents.

34. COMPLIANCE WITH LAW: The Contractor expressly agrees to comply with all known laws and regulations relating to providing services under this Contract. The failure of the Contractor to adhere to any known law or regulation pertaining to furnishing services under this Contract shall constitute a material breach of this Contract.

35. CERTIFICATION OF RESTRICTION ON LOBBYING: The Contractor agrees that no Federal appropriated funds have been paid or will be paid by or on behalf of the Contractor to any

person for influencing or attempting to influence any officer or employee of any Federal agency, a member of Congress, an officer or employee of Congress or an employee of a member of Congress in connection with the awarding of any Federal contract, the making of any Federal Grant, the making of any Federal loan, the entering into of any cooperative agreement and the extension, continuation, renewal, amendment or modification of any Federal contract, Grant, loan or cooperative agreement.

If any funds other than Federal appropriated funds have been paid by the Contractor to any person for influencing or attempting to influence an officer or employee of any Federal agency, a member of Congress, an officer or employee of Congress or an employee of a member of Congress in connection with any Florida Department of Transportation (FDOT) Joint Participation Agreement, the undersigned shall complete and submit Standard Form-LLL "Disclosure Form to Report Lobbying" in accordance with the instructions.

36. GOVERNING LAW: The laws of the State of Florida shall govern this Contract.

37. VENUE: In the event of any legal proceedings arising from or related to this Contract, venue for such proceedings shall be in Brevard County, Florida.

38. WAIVER OF TRIAL BY JURY: The parties hereto expressly waive trial by jury in any action to enforce or otherwise resolve any dispute arising hereunder.

39. ATTORNEY'S FEES: In the event of any legal or administrative proceedings arising from or related to this Contract, including appeals, each party shall bear its own costs and attorney's fees.

40. CONFLICT OF INTEREST: No officer, member or employee of the City or its designees or agents, no member of the governing body, and no other public official of the locality who exercises any function or responsibility with respect to this contract, during his/her tenure or for two (2) years thereafter, shall have any interest, direct or indirect, in this contract or any related subcontract, or the proceeds thereof. Further, the Contractor shall cause to be incorporated in all subcontracts the language set forth in this paragraph prohibiting conflict of interest.

41. CONFLICTING PROVISIONS: Notwithstanding any other provision in this Contract Document, whenever any provisions in the Contract Documents are inconsistent or conflict,

the stricter provision shall prevail.

42. **COVENANT AGAINST CONTINGENT FEES:** The Contractor warrants that it has not employed or retained any company or person, other than a bona fide employee working solely for the Contractor to solicit or secure this Contract and that it has not paid or agreed to pay any person, company corporation individual or firm, other than a bona fide employee working solely for the Contractor any fee, commission, or making of this Contract. For the breach or violation of this paragraph, the City shall have the right to terminate the Contract without liability and, at its discretion, deduct from the Contract price, or otherwise recover, the full amount of such fee, commission, percentage, gift or consideration.

43. **CONSTRUING PROVISIONS:** This Contract shall not be construed against the party who drafted the same, as both parties have obtained experts for their choosing to review the legal and business adequacy of the same. In any conflict between the Technical Specifications, and the General terms of this Contract, the provisions of the latter shall prevail.

44. **SEPARATE COUNTERPARTS & EXECUTION:** This Contract and any amendments hereto may be executed by the Parties individually or in any combination, in one or more counterparts, each of which shall be an original and all of which shall together constitute one and the same contract. Execution and delivery of this Contract and any amendments by the Parties shall be legally valid and effective through; (i) executing and delivering the paper copy of the documents, (ii) transmitting the executed paper copy of the documents by facsimile transmission or electronic mail in "portable document format" (",pdf") or other electronically scanned format, or (iii) creating, generating, sending, receiving, or storing by electronic means this Contract and any amendments, the execution of which is accomplished through use of an electronic process and executed or adopted by a Party with the intent to execute this Contract (i.e. "electronic signature" through a process such as DocuSign®). In making proof of this Contract, it shall not be necessary to produce or account for more than one such counterpart executed by the Party against whom enforcement of the Contract is sought.

45. **RETENTION AND REVIEW OF RECORDS:** The Contractor and its subcontractors or suppliers shall retain all records relating to this Contract for a period of five (5) years, or as further directed by local, state, or federal regulations, from the date that the City makes final

payment, and all other pending matters are closed.

The Contractor and its subcontractors or suppliers shall make available all books, documents, papers, and records of the Contractor or its subcontractor or suppliers, which are directly pertinent to this Contract, to the City's Purchasing and Contracting Administrator or their duly authorized representative, or the U.S. Comptroller General or Inspector General, or the Auditor General, or FDEP duly authorized representative for the purpose of making an audit, inspection, review, copying, excerpts and transcriptions. The Contractor and its subcontractors will permit such representatives to interview employees on the job during working hours.

46. AUDIT RIGHTS: The City reserves the right to audit the records of the Contractor for the commodities and/or services provided under the contract at any time during the performance and term of the Contract and for a period of five (5) years after completion and acceptance by the City. If required by the City, the Contractor agrees to submit to an audit by an independent certified public accountant selected by the City. The Contractor must all the City to inspect, examine and review the records of the Contractor in relation to this contract at any and all times during normal business hours during the term of the Contract.

47. PUBLIC RECORDS: Records of the Contractor that are made or received in the course or performance of the Contractor's obligations under this Contract may be public records that are subject to the requirements of Chapter 119, Florida Statutes and accordingly Contractor shall keep and maintain public records that ordinarily and necessarily would be required by the City in order to perform the service. However, some records may be confidential or exempt from disclosure under Chapter 119, Florida Statute. In the event the Contractor receives a request for any such records, the Contractor shall notify the City and comply with Chapter 119, Florida Statute. The Contractor shall not prepare any news or press release in any way related to this Contract, without the City's written consent. Contractor hereby agrees to comply with the following:

a. As provided in Section 119.0701, Florida Statutes, the Contractor is required to, and by executing this Contract, the Contractor agrees to:
    i. Keep and maintain public records that ordinarily and necessarily would be required by the City to perform the service.

ii. Upon request from the City's custodian of public records, provide the City with a copy of the requested records or allow the records to be inspected or copied within a reasonable time at a cost that does not exceed the cost provided in Chapter 119.07, Florida Statutes or as otherwise provided by law.

iii. Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized the law for the duration of the contract term and following the completion of the Contract if the Contractor does not transfer the records to the City.

iv. Upon completion of the Contract, transfer, at no cost to the City, all public records in possession of the Contractor or keep and maintain public records as required by the City to perform the service. If the Contractor transfers all public records upon completion of the Contract, Contractor shall destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. If the Contractor keeps and maintains public records upon completion of the Contract, Contractor shall meet all applicable requirements for retaining public records. All records stored electronically must be provided to City upon request from the City's custodian of public records in a format that is compatible with the information technology systems of the City.

b. The term "public record" as used in this provision include all documents, papers, letters, maps, books, tapes, photographs, films, sound records, data processing software, or other material, regardless of physical form, characteristics, or means of transmission, made, or received pursuant to law or ordinance or in connection with the transaction of official business by the City.

IF CONTRACTOR HAS ANY QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES TO THE CONTRACTOR'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS CONTRACT, CONTACT THE CITY'S CUSTODIAN OF PUBLIC RECORDS AT 321-567-3682, wanda.wells@titusville.com, 555 S. WASHINGTON AVE., TITUSVILLE, FL 32796.

IN WITNESS WHEREOF, the parties hereto have accepted, made, and executed this Contract upon the terms and conditions above stated.

CONTRACTOR:

By: _____

Date:_____

OWNER:
City of Titusville
555 S. Washington Avenue
Titusville, FL 32796

By: _____
Andrew Connors, Mayor

Date: _____

ATTEST:

_____
Wanda F. Wells, City Clerk
Date: _____

APPROVED AS TO FORM:

_____
Andriene Treasure, City Attorney

Date: _____

APPROVED AS TO CONTENT:

_____
Tom Abbate, City Manager

Date: _____

Staff Review & Preparation:

_____Date: _____
Leslie A. Rothering, Purchasing & Contracting Administrator

_____Date: _____
Sandy Reller, Public Works Department Director

Red Line = Cooper Survey 1/27/26

DRIVE

WOOD DOCK

OTHER LOCATED

*SEE NOTE

66.20'

66.20'

30.28'

240.89'

8.0'

4.1'

W.P.P.(2)

F.H.

R AVENUE)

FD. NAIL (2.97'W)

BUILDING

DATE:
CHARLES E. ROBINSON
PE NO. 97253

REV. NO.	DATE	DRWN	CHKD	REMARKS
	02/26	CER	BH	CONFORMED DRAWINGS

DESIGNED BY: C. ROBINSON
DRAWN BY: M. KULKARNI
SHEET CHK'D BY: B. HAYNER
CROSS CHK'D BY: C. FRIZZELL
APPROVED BY: C. ROBINSON
DATE: APRIL 2025

CDM Smith
101 Southhall Lane, Suite 200
Maitland, FL 32751
Tel: (407) 660-2552
FL COA No. EB-0000020

CITY OF TITUSVILLE, FLORIDA

REPLACEMENT OF THE SEMINOLE LIFT STATION AND DEMOLITION OF THE BAYVIEW LIFT STATION

SEMINOLE LIFT STATION
SITE LAYOUT PLAN

PROJECT NO. 251193-274341
FILE NAME: C008LSPL.DWG

SHEET NO.
C-8A

CONFORMED DRAWINGS

XREFs: [CEP0005T, CDMS_2234, MWP0009PS, CWP0006R, EEWP0005T, x-Riverside Drive Proposed Force Main Piping] Images: []
Last saved by: ROBINSONCE Time: 2/19/2026 2:47:42 PM
pw:\\cdmsmith-az02-pw.bentley.com:pw_p11\251193\274341\04 Design Services NM_90%\02 Civil\10 BIM_CADD\C008LSPL.dwg

City of Titusville

"Gateway to Nature and Space"

REPORT

To: Members of the City Council

From: Thomas Abbate, City Manager

Subject: **Discussion — City Internal Auditor**

Department/Office: City Manager

Recommended Action:

Discussion - City Internal Auditor. (At their regular City Council meeting on February 10, 2026, the City Council postponed this agenda item to this meeting.)

Summary Explanation & Background:

At their regular City Council meeting on January 29, 2026, City Council requested staff add an agenda item to this meeting for the City's Internal Auditor to come before the City Council to have a discussion.

Alternatives:

Item Budgeted:

Source/Use of Funds/Budget Book Page:

Strategic Plan:

Strategic Plan Impact:

ATTACHMENTS:

1. Internal Audit Department Guidance
2. City Auditor

City of Titusville
Memorandum

To: Mayor and City Council Members

From: Amelia Robinson, Internal Auditor

Date: February 3, 2026

Re: Internal Audit Department Guidance

The city does not create audit procedures on a case-by-case basis. Internal Audit work follows established standards and statutory requirements. These standards define how audits are planned, performed, documented, reported and followed up ensuring consistency, objectivity and accountability.

- Mission - The mission of the Internal Auditor is to provide independent objective assurance and advisory services that enhance accountability, transparency and efficiency and to proactively identify risks, evaluate internal controls, and make practical recommendations that strengthen city operations, safe guard public resources, support effective governance and prevent fraud waste and abuse.
  (Cited From: IIA Standards)

- Professional Standards - The Internal Auditor conducts its work in accordance with the (GAO) United States Government Accountability Office's General Accepted Government Auditing Standards, IIA (Institute of Internal Auditors and the Association of Local Government Auditors (ALGA). The Internal Auditor abide by the Institute of Internal Auditor's Code of Ethics.
  (Internal audit must conform to: IIA Standards & Code of Ethics, GAO Yellow Book and ALGA Best Practices)

- Independence - The Internal Auditor is required to be independent, both in fact and appearance, of their auditees. Independence is accomplished when the Internal Auditor's work is carried out freely and objectively. The Internal Auditor is not to be placed in situations in which objective professional judgments cannot be made. Any possible conflict of interest should be documented in the working papers. While it is important to maintain a cooperative and friendly manner, it is also important that the Internal Auditor be viewed as impartial.
  (Cited from IIA Standards; GAO Yellow Book)

- Confidentiality – Information about audit work in progress is considered confidential per Florida Statute 119.0713 The audit report of an internal auditor and the investigative report of the inspector general prepared for or on behalf of a unit of local government becomes a

public record when the audit or investigation becomes final. An audit or investigation becomes final when the audit report or investigative report is presented to the unit of local government. Audit workpapers and notes related to such audit and information received, produced, or derived from an investigation are confidential and exempt from s. 119.07(1) and s. 24(a), Art. I of the State Constitution until the audit or investigation is complete and the audit report becomes final or when the investigation is no longer active. An investigation is active if it is continuing with a reasonable, good faith anticipation of resolution and with reasonable dispatch.
(*Cited from Fla. Stat. 119.0713)*

- Audit Process:
  1. Each year, the Internal Auditor develops an Annual Audit Plan which is discussed and approved by the City Manager through identifying high-risk areas and the greatest opportunities for improvement. Audit engagements are chosen based on their potential to strengthen internal controls, improve efficiency, reduce costs, enhance revenues and safeguard public resources. Allegations of waste, mismanagement or fraud receive immediate attention.
  2. Audit Planning – Includes steps to initiate the audit, hold an entrance conference, prepare the audit plan and implement the audit program.
  3. Audit Fieldwork – Fieldwork consists of data collection, analysis and other activities designed to meet audit objectives. During fieldwork, more specific information to support and document audit findings is obtained.
  4. Reporting – Reporting is the preparation of the written report, which communicates auditor findings, conclusions and recommendations. Draft reports are provided to Department Heads and they are provided the opportunity for feedback before the final report is issued.
  5. Follow Up – Management is responsible for implementing corrective actions identified in internal audit reports. The Internal Auditor monitors the status of corrective actions to the extent practical. Due to Internal Audit Department being a single-auditor function, formal follow-up may occur concurrently with subsequent audit engagements or as part of the next scheduled audit of the department or function being audited.
     (Steps described align with both IIA Standards and Government Auditing Standards)

CITY OF TITUSVILLE

"Gateway to Nature and Space"

Office of the City Attorney

555 S. Washington Avenue • P.O. Box 2806
Titusville, FL 32796-3584 • 32781-2806

Phone: (321) 383-5693
CityAttorney@titusville.com
www.titusville.com

To: Mayor and City Council Members

Fr: Andriene Treasure, City Attorney

Date: February 3, 2026

Re: City Auditor

MEMORANDUM

Section 15, City of Titusville's Charter, reads in pertinent parts:

> …[W]ithout limitation of the foregoing, the council shall have the power to:
>
> (1) Appoint and remove the city manager; (2) Appoint and remove the city attorney; (3) [Editorially deleted] (4) Establish other administrative departments and distribute the work of divisions within the departments; (5) Adopt the budget of the city; (6) Appoint city auditor. (emphasis added).

The remainder of the Charter and Code of Ordinances are silent as to any further appointment, removal, or job duties of the City Auditor and do not identify the City Auditor's direct report. By contrast, Section 15 explicitly states that the Council has the authority to appoint and remove the City Manager and the City Attorney, and the Charter and Ordinances further outline their respective individual duties and responsibilities. Of note, the assistant city attorney, like the City Auditor, is a charter position appointed by Council, yet the Charter is also silent as to their removal and other explicit duties. However, the Charter provides that "assistant city attorneys shall work under the supervision of the city attorney and perform such duties as he shall require of them." Section 34, City of Titusville Charter. There is no such direction for the city auditor.

Historically, the practice of the City has been that the City Auditor has been a non-charter employee of the City. The last three City Auditors were never appointed by Council and have always reported to the City Manager, working as an independent officer in their duties. The employment status between a charter and non-charter position carries some distinctions that should be considered when making an appointment versus regular hire and may have ramifications on the existing employment status in this instance.

Please note that pursuant to Chapter 119 of the Florida Statutes and supporting case law, an auditor's report is finalized upon issuance to the local governmental unit-*i.e.*, the governing body. All auditor reports of the city, once finalized, must be disseminated to Council for review.

Please let me know if you have any questions.

To: Andrew Connors, Mayor, Andrew.Connors@titusville.com
Herman A. Cole, Vice-Mayor, Herman.Cole@titusville.com
Jolynn Nelson, Council member, Jolynn.Nelson@titusville.com
Sarah Stoeckel, Councilmember, Sarah.Stoeckel@titusville.com
Megan Moscoso, Council member, Megan.Moscoso@titusville.com

City of Titusville

"Gateway to Nature and Space"

REPORT

To: Members of the City Council

From: Thomas Abbate, City Manager

Subject: **Health Benefits Consultant RFP Solicitation**

Department/Office: Human Resources

Recommended Action:
Approve Benefits Consultant RFP solicitation.

Summary Explanation & Background:
Staff recommends approval of a Benefits Consultant Solicitation and setting this action as a priority.

Alternatives:
Do not approve the Benefits Consultant RFP.

Item Budgeted:
N/A

Source/Use of Funds/Budget Book Page:
Fund 511 Partially Self Insured

Strategic Plan:
Financial Stability

Strategic Plan Impact:
This action is in line with the Strategic Plan Initiative to Maintain Financial Stability while providing cost-efficient employee health care coverage for our municipal employees.

ATTACHMENTS:
1. Request for Proposal Bid Acknowledgement
2. Attacment A - Proposal_Worksheet -Final
3. Attachment B - Required Forms

	Request for Proposal Bid Acknowledgment *This is not an order!*	**SUBMIT SEALED PROPOSAL TO:** *City of Titusville* *Purchasing & Contracting Division* *PO Box 2806 (555 South Washington Avenue)* *Titusville, FL 32781-2806 (32796-3584)*
FLORIDA TAX EXEMPT #85-8012621749C-1	**PROPOSALS RECEIVED AFTER BELOW DATE AND TIME WILL NOT BE ACCEPTED**	FEDERAL TAX EXEMPT #59-6000523
Release Date: March 12, 2026 **Proposal Number:** CO-26-P-001TB		**Procurement Analyst:** Tracy Bailey
Proposal Title: EMPLOYEE BENEFITS & HR CONSULTING SERVICES	**Proposal Opening Date and Time:** April 16, 2026 @ 3:30 p.m.	**BID SPECIFICATIONS MAY BE OBTAINED AT:** Purchasing and Contracts, 555 Washington Ave, Titusville, FL 32796, or at the DemandStar® website
Pre-Proposal Date, Time, and Location:	☑ None ☐ Mandatory ☐ Non-Mandatory	

▼CONTRACTOR MUST COMPLETE THIS AREA AND RETURN FORM▼

I have carefully examined the Request for Proposal, Instructions to Proposers, General and/or Special Conditions, Scope of Work, proposed Agreement, and any/all other documents accompanying or made part of this Proposal invitation.

- I hereby propose to furnish the services specified in the invitation at the prices or rates quoted in my proposal. I agree that my proposal will remain firm for a period of ninety (90) days in order to allow the City adequate time to evaluate all received Proposals.
- I certify that all information contained herein is truthful to the best of my knowledge and belief. I further certify that I am duly authorized to submit this Proposal on behalf of the vendor/contractor as its act and deed and that the vendor/contractor is ready, willing and able to perform if awarded the contract.
- I certify that this Proposal is made without prior understanding, agreement, or connections with any corporation, firm or person submitting a Proposal for the same materials, supplies or equipment, and is in all respects fair and without collusion or fraud. I agree to abide by all conditions of this bid and certify that I am authorized to sign this bid for the Contractor.
- In submitting a Proposal to the City of Titusville, the Contractor offers and agrees that if the Proposal is accepted, the Contractor will convey, sell, assign, or transfer to the City of Titusville all rights, title, and interest in and to all causes of action it may now or hereafter acquire under the antitrust laws of the United States and the State of Florida for price fixing relating to the particular commodities or services purchased or acquired by the City of Titusville. At the City's discretion, such assignment shall be made and become effective at the time the City tenders final payment to the Contractor.

IF RETURNING AS A "NO BID", PLEASE STATE REASON:

Legal Name of Contractor:	**Business Address:**
Telephone Number:	**FEDERAL ID NO. (FEIN) OR SOCIAL SECURITY NO. (SSN.):**

The contractor acknowledges that information provided in this RFP is true and correct.

X _____ _____

AUTHORIZED SIGNATURE *(MANUAL)* NAME *(PRINTED)*

_____ _____

TITLE DATE

THIS FORM MUST BE NOTARIZED AND RETURNED WITH YOUR PROPOSAL

STATE OF _____ COUNTY OF _____

The foregoing instrument was acknowledged before me by means of ☐ Physical Presense or ☐ Online Notarization

this _____ day of _____, _____, by _____

(month) (year) (name of person acknowledging)

_____ _____

(Print, Type, or Stamp Commissioned Name of Notary Public) (Signature of Notary Public - State of Florida)

☐ Personally Known ☐ OR Produced Identification Type of Identification Produced: _____

BOND DATA

CONTRACTOR MUST PROVIDE

		AMOUNT:
Yes ☐ No ☑	BID BOND	_____
Yes ☐ No ☑	MAINTENANCE BOND	_____
Yes ☐ No ☑	PERFORMANCE AND PAYMENT BOND	_____

Bonds must be issued by a surety company who complies with the requirements of § 287.0935, Fla. Stat.

PAYMENT OF GOODS AND SERVICES PROVIDED AS A RESULT OF THIS SOLICITATION WILL BE MADE PER FLORIDA STATUTE. ALL FIRST TIME CONTRACTORS MUST SUBMIT A W-9 FORM.

REQUEST FOR PROPOSAL
EMPLOYEE BENEFITS & HR CONSULTING SERVICES
PROPOSAL #CO-26-P-001/TB

CONTENTS **PAGE NUMBER**

Proposal Schedule	Page 3
Section I - Introduction and Submittal Information	Page 3 - 8
Section II – Special Conditions	Page 8 - 9
Section III - Scope of Services and Specifications	Page 9 - 14
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City General Terms & Conditions	Page 17 - 24

Exhibits:
Exhibit 1 – City Employee Benefits Booklet
Exhibit 2 – Sunlife Reinsurance

Attachments:
Attachment A – Proposal Worksheet
Attachment 2 – Required Forms

Required forms to return within Proposal:
- ☐ **Signed/Notarized Cover Page** - Request for Proposal (from Front Docs)
- ☐ **Attachment A** – Proposal Worksheet
- ☐ **Attachment B** - Required forms
  - ☐ Addendum Acknowledgement Form
  - ☐ Consultant Affidavit Regarding Scrutinized Company List
  - ☐ Drug Free Workplace Form
  - ☐ Public Entity of Crime Form
  - ☐ E-Verify Form
  - ☐ Human Trafficking Affidavit
  - ☐ Form of Non-Collusion Affidavit
  - ☐ Certification of Equal Employment Opportunity
  - ☐ Certification Regarding Debarment and Suspension

REQUEST FOR PROPOSAL
EMPLOYEE BENEFITS & HR CONSULTING SERVICES
PROPOSAL #CO-26-P-001/TB

PROPOSAL SCHEDULE

The following anticipated timeline for completion of the Request for Proposal process and implementation has been established:

IDENTIFICATION	DATE
Release of Proposal	March 12, 2026
Deadline for Questions	April 6, 2026
Proposal Due Date	April 16, 2026
Selection Committee Meeting	TBD
Recommendation to Council	TBD

SECTION I - INTRODUCTION AND SUBMITTAL INFORMATION

1. INTRODUCTION/PURPOSE

The City of Titusville is requesting proposals from licensed qualified firms to provide employee benefits consulting services The purpose of this Request for Proposal (RFP) is to establish a multi-year contract with one (1) qualified firm for basic Benefits Consulting Services for a fixed annual fee, additional fixed hourly fees for additional basic Human Resources Consulting, and Not-to-exceed reimbursable expense. The City may award optional services if offered

The City is currently contracted on an as needed basis with Digital Insurance, LLC, fka/RobinsonBush under fixed hourly rates.

2. INFORMATION AND CLARIFICATION

For information or clarifications, contact Tracy Bailey, Purchasing and Contracts, at (321) 567-3734, fax (321) 383-5628, or email: tracy.bailey@titusville.com. All requests for clarification must be received in writing no later than ten (10)) calendar days before the proposal's due date. Interpretations and supplemental instructions will be issued as written addenda. Proposers must acknowledge all addenda in their submittal on the provided form. Only the interpretation or correction given by the Purchasing and Contracting Department representative in writing through an addendum shall be binding. Contacting City Council Members or employees during the solicitation process may result in proposal rejection. RFP documents are available at Euna OpenBids or via email request to the staff listed above.

3. SUBMITTAL

Proposers must submit one (1) hardcopy and one (1) digital copy saved on a USB flash drive or CD/DVD in searchable Adobe Portable Document Format (.pdf) or .ZIP file format and Excel (xls or .xlsx) when price sheet form provided, with minimum resolution of 300dpi, in a sealed envelope or box. All submittals must be received by **3:30 p.m. on April 16, 2026**, at City Hall, Purchasing and Contracting Department, 555 S. Washington Ave., 2nd Floor, Titusville, FL 32796. Proposers are responsible for all submission costs and ensuring timely delivery; no fax/email submissions

accepted. Proposals will be publicly opened, and firm names read aloud. Late proposals will be rejected. Submittals must be marked:

Title: "EMPLOYEE BENEFITS & HR CONSULTING SERVICES #CO-26-P-001/TB"
Open: April 16, 2026, 3:30 p.m.
Address: City of Titusville – City Hall, Purchasing and Contracting Department, 555 S. Washington Ave., 2nd Floor, Titusville, FL 32796

Proposals must remain valid for 120 days.
Incomplete proposals or those from vendors on the convicted vendor list (Section 287.133, F.S.) will be disqualified.

4. CONE OF SILENCE

In accordance with Florida Statutes § 286.0113, a Cone of Silence is in effect for this solicitation, prohibiting communication between vendors and City officials, employees, or agents, except with the designated representative noted in the solicitation documents. The Cone of Silence is designed to protect the professional integrity of the public procurement process by shielding it from undue influence prior to the recommendation of contract award. This restriction applies from the time of advertisement until the Notice of Award is posted and is designed to ensure the integrity of the procurement process. Vendors must refrain from contacting City Council members, officers, or employees regarding this solicitation. Violations may result in disqualification. The Cone of Silence does not apply to communications with the designated representative or discussions at a duly noticed Pre-Bid Conference or public meeting. Violations may result in disqualification and potential debarment from future solicitations. This period ends upon the issuance of the Notice of Award.

5. PROPOSAL COST

All proposal preparation costs are the Proposer's responsibility.

6. CONTRACT TERM

The successful proposer may be awarded a contract for three (3) years, starting September 15th, 2026, or upon contract execution with two (2) consecutive one-year administrative renewal options, not to exceed five (5) years, subject to successful negotiations and satisfactory performance evaluation. Annual obligations are subject to City Council budget appropriations each fiscal year: October 1 – September 30.

7. CONTRACT NEGOTIATION

The City at its sole discretion reserves the right to enter into contract negotiations with the top-ranked, responsible Proposer, proceeding to the next if negotiations fail, until a contract is executed or all acceptable proposals are rejected. No Proposer shall have any rights against the City arising from such negotiations or termination thereof.

8. CITY COUNCIL ACTION

The City Council's approval of the Evaluation Committee's recommendation is final. City Council action is expected within 60 days, though not guaranteed.

9. REFERENCES

Proposer must submit as a part of the proposal package, at minimum three (3) five (5) client contracts supporting similar size and scope of services.

References must be for contracts within the past 5 years and include the name of the entity, address, contact person, telephone number, and email address.

Attachment A – Proposal Worksheet to be completed
****Note: A contact person shall be someone who has personal knowledge of the Proposer's performance for the specific requirement listed. Contact person should be informed that they are being used as references and that the City may be contacting them.*

10. COMPENSATION, FEE, AND COSTS

Prices are firm for the initial 36-month term. Price adjustment requests for subsequent years if not offered as price lock option, must be submitted 180 days before the contract anniversary, to allow for budget appropriations. All requests for adjustments must be documented and justified in a written proposal and approved by the City in accordance with City Policy. Adjustments shall be limited to the current Consumer Price Index for All Urban Consumers (CPI-U) for Southeast Region (as published by the U.S. Bureau of Labor Statistics), not exceeding 5% annually.

11. Public Records. Article 1, section 24, Florida Constitution, guarantees every person access to all public records, and section 119.011, F.S., provides a broad definition of "public record." As such, the entirety of the Proposals are public records and are subject to disclosure unless exempt from disclosure by law. If the Proposer considers any portion of its Proposal to be Confidential Information, the Proposer is to mark the document as "confidential" and simultaneously provide the City with a separate, redacted copy of its Proposal. For each portion redacted, the Proposer is to briefly describe in writing the grounds for claiming exemption, including the specific statutory citation for such exemption. On the cover of the redacted copy, the Proposer is to provide its name and the City's solicitation name and number and clearly title it, "Redacted Copy." Only portions of material that the Proposer claims are Confidential Information are to be redacted.

In accordance with section 119.071(1)(b), F.S., Proposals are exempt from production in response to public records requests until such time as the City provides notice of an intended decision or until 30 days after opening the Proposals, whichever is earlier. After that time, the City will provide the redacted copy, if any, in response to a public records request. If the Proposer fails to mark a record it claims contains Confidential Information as "confidential," or fails to submit a redacted copy in accordance with this section of a record it claims contains Confidential Information, the City shall have no liability for release of such record. The foregoing will apply to every instance in which the Proposer fails to both mark a record "confidential" and redact it in accordance with this section, regardless of whether the Proposer may have properly marked and redacted the same or similar Confidential Information in another instance or record submitted to the City.

In the event of a request for public records pursuant to Chapter 119, F.S., the Florida Constitution, or other authority, to which documents that are marked as "confidential" are responsive, the City will provide the redacted copy to the requestor. If the Proposer has marked a record as "confidential" but failed to provide a redacted copy to the City, the City may notify the Proposer of the request and the Proposer may have up to ten

(10) Business Days from the date of the notice to provide a Proposer-redacted copy, or else the City may release the unredacted record to the requestor without liability. If a requestor asserts a right to the redacted Confidential Information, the City will notify the Proposer such an assertion has been made. The notice will provide that if the Proposer seeks to protect the Proposer-redacted Confidential Information from release it must, within thirty (30) days after the date of the notice and at its own expense, file a cause of action seeking a declaratory judgment that the information in question is exempt from section 119.07(1), F.S., or other applicable law and an order prohibiting the City from publicly disclosing the information. The Proposer shall provide written notice to the City of any cause of action filed. If the Proposer fails to file a cause of action within thirty (30) days the City may release the unredacted copy of the record to the requestor without liability.

If the City becomes subject to a demand for discovery or disclosure of documents that are marked as “confidential” in a legal proceeding, (whether by oral questions, interrogatories, requests for information or documents, subpoena, or similar process), unless otherwise prohibited by law, the City will give the Proposer notice of the demand or request prior to disclosing any Confidential Information to allow the Proposer to seek a protective order or other appropriate relief at the Proposer’s sole discretion and expense. If the Proposer fails to take appropriate and timely action to protect the materials it has designated as Confidential Information or fails to provide a redacted copy that may be disclosed, the City will provide the unredacted materials to the requester.

By submitting a Proposal, the Proposer agrees to protect, defend, and indemnify the City for all claims, costs, fines, settlement fees, and attorneys’ fees, at both the trial and appellate levels, arising from or relating to the Proposer’s determination its records contain Confidential Information. In the event of a third-party claim brought against the City for failure to release the Proposer’s redacted Confidential Information, the Proposer shall assume, at its sole expense, the defense or settlement of such claim, including attorney’s fees and costs at both the trial and appellate levels. If the Proposer fails to continuously undertake the defense or settlement of such claim or if the Proposer and the City mutually agree that the City is best suited to undertake the defense or settlement, the City will have the right, but not the obligation, to undertake the defense or settlement of such claim, at its discretion. The Proposer shall be bound by any defense or settlement the City may make as to such claim, and the Proposer agrees to reimburse the City for the expense, including reasonable attorney’s fees and costs at both the trial and appellate levels associated with any defense or settlement that the City may undertake to defend Proposer’s Confidential Information. The City will also be entitled to join the Proposer in any third-party claim for the purpose of enforcing any right of indemnity under this section.

If at any point the City is reasonably advised by its counsel that disclosure of the Confidential Information is required by law, including but not limited to Florida’s public records laws, the City may disclose such Confidential Information without liability hereunder

12. INDEMNIFICATION AND INSURANCE REQUIREMENTS

INDEMNIFICATION

The City shall be held harmless against any and all claims for bodily injury, sickness, disease, death, personal injury, damage to property or loss of use of any property or assets resulting therefrom, arising out of or resulting from the performance of the products or from the services for which the City is contracting hereunder, provided such is caused in whole or in part by any negligent act, intentional act, or error and omission of the Consultant, or any subcontractor or any of their agents or employees, or arises from a job-related injury.

The Consultant agrees to indemnify the City and pay the cost of the City's legal defenses, including fees of attorneys as may be selected by the City, for all claims described in the hold harmless clause herein. Such payment on behalf of the City shall be in addition to any and all other legal remedies available to the City and shall not be considered to be the City's exclusive remedy.

It is agreed by the parties hereto that the Consultant has received specific consideration under this agreement for this hold harmless/indemnification provision.

INSURANCE REQUIREMENTS

The Consultant shall procure and maintain, at their own expense, the following insurance policies until final acceptance of all work under this contract. The policy limits are minimum requirements:

1) **Commercial General Liability Insurance**: Occurrence-based coverage with a minimum of $1,000,000 per occurrence and $2,000,000 policy aggregate (defense costs in excess of liability limits). Coverage shall include premises and operations, products and completed operations, personal injury, and advertising liability. The City shall be named as an Additional Insured.

2) **Auto Liability Insurance**: Covering all vehicles used in connection with this contract, with a minimum combined single limit of $1,000,000, including hired and non-owned liability and $25,000 medical payment.

3) **Workers' Compensation and Employers Liability Insurance**: Statutory benefits as required by Florida law, with employer's liability limits of $500,000 per accident and per disease. Subcontractors must provide evidence of this coverage or a valid exemption for independent contractors or sole proprietorships without employees. For work near navigable waterways, United States Longshoremen's and Harbor Workers (USL&H) coverage and Jones Act contingent coverage are required unless exempt.

4) **Professional Liability Insurance**: For professional or consulting services, a policy with a minimum of $2,000,000 per claim.

5) **Cyber Liability:** The Consultant shall procure and maintain, at their own expense, Cyber Liability Insurance with a minimum limit of $1,000,000 per claim and $2,000,000 aggregate, covering data breaches, unauthorized access, disclosure of personally identifiable information (PII), protected health information (PHI), and other confidential data handled in the performance of services. Coverage shall include, but not be limited to, costs for notification, credit monitoring, legal fees, regulatory fines, and penalties arising from a data breach or cyber incident.

Specialty insurance (e.g., Crane and Rigging, Inland Marine) may be required based on project-specific risks, as determined by City Risk Management. Certificates of Insurance (COI) must be provided within five (5) calendar days of award, naming the City as an Additional Insured (or providing a waiver of subrogation for workers' compensation) and including a 30-day cancellation notice. Subcontractor insurance is the Consultant's responsibility.

THE CITY RESERVES THE RIGHT TO CHANGE OR MODIFY LIMITS OF LIABILITY OR COVERAGE FOR PROJECTS OF AN UNUSUAL SIZE OR RISK.

SECTION II – SPECIAL CONDITIONS

1. MINIMUM EXPERIENCE & QUALIFICATIONS

1.	Proposers must be registered in Florida (www.sunbiz.org), to conduct business in the State of Florida
2.	A minimum of five (5) years of experience providing employee benefits consulting services to public-sector or private entities
3.	Hold a professional certification in employee benefits such as Certified Employee Benefits Specialist (CEBS), Health Rosetta Certified, or Certified Benefits Professional (CBP).
4.	Experience supporting self-funded, partially self-funded or fully funded employer sponsored medical, dental, vision and life benefit plans to include core and voluntary products
5.	Demonstrated experience with benefits-related RFP development, vendor negotiations, and contract oversight.
6.	Ability to provide services without conflicts of interest and in a vendor-neutral advisory capacity.

Attachment A – Proposal Worksheet to be completed The qualifications package should be kept as brief as possible, however, with the subject areas clearly defined.

Failure to meet the minimum qualifications may result in rejection of the proposal as non-responsive.

2. PRICE TRANSPARENCY AND AUDIT RIGHTS

The Consultant shall fully disclose all direct and indirect compensation, commissions, overrides, incentives, or other remuneration. The Consultant shall not receive commissions or contingent compensation unless expressly disclosed and approved by the City.

The City reserves the right to audit Consultant compensation and verify compliance with pricing disclosures. Failure to disclose compensation or conflicts of interest may result in termination for cause.

3. DEFINITIONS:

a) **GASB 75 –** Governmental Accounting Standards Boad Statement number 75 - Accounting & Financial Reporting for Postemployment Benefits Other Than Pensions

b) **High Performance Health Plan –** Plan designed to deliver high-quality healthcare while controlling costs, focusing on preventive care, efficient provider networks, and enhanced patient outcomes.
c) **ISL threshold -** Individual stop loss deductible
d) Narrow Network Agreements
e) **OPEB -** Other Post-Employment Benefits
f) (PBM) - pharmacy benefit management
g) **Referenced Based Pricing Plans** - a healthcare pricing model where reimbursement for medical services are based on a predetermined benchmark rather than negotiated rates with providers.

SECTION III - SCOPE OF SERVICES

1. PURPOSE

The purpose of this solicitation is to solicit proposals from licensed qualified firms to provide employee benefits consulting services. The purpose of this Request for Proposal (RFP) is to establish a multi-year contract with one (1) qualified firm for basic Benefits Consulting Services for a fixed annual fee, additional fixed hourly fees for additional basic Human Resources Consulting, and Not-to-exceed reimbursable expense.

2. BACKGROUND:

The City of Titusville offers its staff, retirees and their dependents comprehensive benefits package. Benefits Administration is handled principally by the Human Resources Department. We currently offer Local Ordinance Retirement plan, Nationwide Retirement (457 (b) and 401 (a) with employer matching contribution) Wellness Program Activities. (wellness program offers incentive-based activities to promote healthy life choices with a focus on physical, mental and emotional well-being) and the benefit plans as provided in section 2.d. The City offers an Occupational Health Clinic partnered with Parrish Medical Center. The clinic offers a variety of services available to employees and their dependents. The services at the health center include primary care physicians, health and wellness, preemployment physicals, worker's compensation visits, and other employment-related medical visits. The City's OPEB actuary is Fontenot Benefits and Actuarial Consultants, who is the actuary for the post employments benefits GASB75. The City's Pension Actuary is Foster and Foster.

a) Benefits Management Structure

The City makes all policy decisions regarding employee benefits. It has designated an Employee Benefits Advisory Committee to provide advisory support for the City's self-funded insurance program and employee benefits. The advisory committee consists of five to seven voluntary members, including representatives from current employees and retirees' group with delegates from multiple city departments. Responsibilities include reviewing the financial and operational aspects of the health insurance fund and

evaluating insurance plans. Identifying improvement and cost saving opportunities and submitting written recommendations to the City Manager. Members collaborate with Human Resources and the Finance staff for access to non-PHI data such as quarterly fund reports.

b) Eligible Employees

The combined participation of all City employees 601 eligible, 220 retirees.

c) Plan Year and Open Enrollment

The City current plan year is October 1- September 30 with open enrollment is August/September.

The City is working to move the plan year to a calendar year starting in January 2027, with open enrollment period of November of the subsequent years.

d) Current Benefit Plan Data

Current City Provided Benefits Providers ***See Exhibit 1 - Benefits Booklet for Summary of Benefits***		
Product	**Provider**	**Last Contract Initial Term**
Health – Active and retiree under 65	**Aetna** Value Plan Enhanced Plan	2019
Health – Medicare Supplement	Cigna	2024
Health – Medicare Advantage -PD	Humana	2024
Health – Medicare Supplement Plan N	Cigna	2024
EAP	ESI – Employee Assistance Group	2025
Reinsurance	Sunlife - Exhibit 2	2024
Dental	Aetna	2023
Basic Life and AD&D	Minnesota Life	2017
Voluntary Supplemental Life	Minnesota Life	2017
Other Employee Paid Benefits Processed Through Payroll Deductions		
AFLAC		N/A
Liberty National		N/A
Vision	Humana	2025
Flexible Spending Accounts	P&A Administrative Services, Inc.	2017

3. GENERAL SERVICES

a) **Account Management and Access**

- Provide dedicated senior-level consulting personnel as the primary contact for managing the City's employee benefits program.
- Ensure the Consultant is accessible to City staff and available to attend meetings, workshops, and presentations as requested.

b) **Advisory and Technical Guidance**

- Provide general and technical guidance on employee benefits issues to ensure a more efficient and effective healthcare delivery, focusing on quality and cost control, including but not limited to market trends, regulatory compliance, contract and statutory interpretation, plan design alternatives (such as high-performance health plans, referenced-based pricing plans, etc.), transparent advisor relationship, transparent open network, patient stewardship, independent active administration, and cost containment strategies.
- Assist the City with monthly tracking with analysis and guidance by evaluating contributions strategies, reviewing stop loss strategies, ISL threshold and aggregating specific levels and monitoring pharmacy trends related to benefits program policy, administration, and governance.

c) **Communications Support**

- Assist in the development and review of employee communications and educational materials for content, clarity, compliance, and accuracy.
- The Benefits Consultant will provide the Human Resources team with employee communication, guidance and vendor management during annual open enrollment communications, health fairs, and employee education meetings.

d) **Meetings and Presentations**

- Attend City Council meetings, insurance advisory committees, labor-management meetings, and employee meetings on an as needed basis minimum of seven (7) meetings annually.
- Prepare and present written and oral reports, recommendations, and executive summaries on monthly basis.

e) **Vendor-Neutral / Fiduciary Standard**

- Act in a vendor-neutral advisory capacity and in the best interests of the City.
- Fully disclose all direct and indirect compensation, commissions, overrides, incentives, or other remuneration.
- The Consultant shall not receive commissions or contingent compensation unless expressly disclosed and approved by the City.

4. TECHNICAL SERVICES

a) **Health Plan Comparison and Utilization Analysis**

- Obtain and analyze medical and pharmacy claims and financial data on a monthly basis.
- Prepare written analyses identifying utilization trends, cost drivers, emerging risks, and opportunities for improvement on a monthly basis.

- Provide benchmarking comparisons against similarly situated public-sector employers on an annual basis.

b) **Cost Containment and Plan Optimization**
- Evaluate and recommend cost containment strategies for all benefits offered including plan design changes, network alternatives (e.g. high-performance health plan, referenced based pricing plans, narrow network agreements, etc.,) pharmacy benefit management (PBM) strategies, direct contracts, value based primary care, major specialties and outlier patients, open networks, employer clinics, and wellness initiatives on an annual basis.

c) **Premium and Contribution Structure Analysis**
- Assist with review and recommend premium rate structures and employer/employee contribution strategies based on claims experience, actuarial projections, and market benchmarks on an annual basis.

d) **Compliance and Regulatory Support**
- Advise the City on compliance with ACA, HIPAA, COBRA, IRS, DOL, ERISA (as applicable), and Florida statutory requirements to the Florida Office of Insurance Regulations on annual basis.
- Assist with compliance filings, notices, testing, and audit preparation.

e) **Self-Funded Program Support**
- Provide guidance related to annual budgeting, reserve development, stop-loss coverage, attachment points, and funding strategies for self-funded or partially self-funded plans.

f) **Actuarial and OPEB Coordination**
- Provide actuarial services related to rate structure based on loss ratio driven by high medical conditions, medical claims and loss ratios for our annual actuarial valuations and GASB 75/OPEB reporting.
- Assist in the preparation of data and materials required for actuarial reviews.

g) **Stop-Loss and Reinsurance Support**
- Assist with the evaluation of stop-loss or excess insurance coverage.
- Analyze proposals and provide recommendations to the City.

h) **Section 125 and Cafeteria Plan Review**
- Review plan documents for accuracy, compliance, and appropriateness of eligible benefits.

i) **Wellness Programs**
- Assist in evaluating, implementing, and measuring the effectiveness of wellness, disease management, and health initiatives on an annual basis as it relates to overall plan cost.

j) **Risk Management Support and Consulting Services**
- Assist in planning, managing, and evaluating activities of Risk Management, Worker's Compensation, loss control and safety.

5. PROCUREMENT SERVICES

a) **Solicitation Development and Administration**
- Assist with the preparation of solicitations for employee benefits vendors and third-party administrators in compliance with City procurement requirements and State of Florida Regulations. Sample must be provided with response.
- Assist with development of evaluation criteria and scoring methodologies.
- Respond to vendor questions through the City Purchasing staff who manage the procurement process.

b) **Evaluation and Selection Support**
- Participate in oral interviews and proposal evaluations.
- Prepare comprehensive evaluation reports and executive summaries. Sample must be provided with response.

c) **Appeals and Litigation Support**
- Assist City staff in responding to bid protests, administrative appeals, or litigation arising from procurement activities.
- Provide testimony or supporting documentation if required.

6. CONTRACT SERVICES

a) **Contract Development and Negotiation**
- Assist in negotiating vendor contracts and contract renewals, including plan design, premium rates, performance guarantees, and service standards.
- Coordinate through the City Purchasing Staff and with the City Attorney to ensure contract legality and risk mitigation.

b) **Implementation Services**
- Serve as an intermediary between the City and vendors during implementation of new or modified programs.
- Review enrollment materials and implementation communications.

c) **Ongoing Contract Oversight**
- Audit vendor performance and contract compliance on an annual basis.
- Providing monthly written claims and performance reports.

7. ENHANCED SERVICES

The Consultant to provide the following services to support the

a) **Data Security and HIPAA Risk Support**
- Advise on HIPAA compliance, data security practices, and breach response coordination.

b) **Labor and Litigation Costing Support**
- Provide benefit costing and financial exposure analysis related to labor negotiations, grievances, or litigation.

8. PERFORMANCE STANDARDS AND DELIVERABLES

a) **Required Deliverables**

- Annual renewal analysis with financial and plan design recommendations.
- Monthly medical and pharmacy claims utilization reports.
- Annual benchmarking comparisons against similarly situated public-sector employers.
- Compliance summaries identifying regulatory changes and required actions as signed into law.

b) **Service Level Expectations**

- Timely responsiveness to City inquiries.
- Attendance at meetings and presentations at minimum of seven (7) meetings annually.
- Availability of specialized consulting staff

c) **Performance Review**

- Participate in annual performance reviews conducted by the City.

9. OPTIONAL SERVICES

The Consultant may perform additional advisory or technical services not listed within this scope of work when requested by the City and negotiated by the parties based on fee schedule offered and negotiated within this procurement.

REIMBURSABLE EXPENSES

Proposers shall identify any reimbursable expenses not included in the Base Service Fee. All reimbursable expenses must be pre-approved by the City and shall be subject to a not-to-exceed limit.

SECTION IV - EVALUATION AND SELECTION PROCESS

The City of Titusville reserves the right to award all, or part of the services described in the documents of this RFP.

An Evaluation Committee qualified members will evaluate, score and rank all responsive proposals based on the submitted information, references, and evaluation criteria. The City may, at its discretion, “short-list” a minimum of the top three (3) firms whose submissions are determined to be within the competitive range for final consideration.

Shortlisted firms may be invited to participate in oral presentations and Q&A to clarify their understanding of the scope and ability to meet the City’s needs. Following these presentations, the Committee will compile individual scores and rankings into a collective evaluation, with the highest-rated proposal listed first.

At its sole discretion, the City may request shortlisted firms to submit a Best and Final Offer (BAFO) after the oral presentations. The Committee may then make a recommendation to the City Council to award the contract to the firm(s) deemed best qualified to provide the required services at the best value. BAFOs are optional; original proposals may stand

Please note that submission of a BAFO does not guarantee a contract award. The City reserves the right to reject any or all offers, waive minor irregularities, and make an award deemed to be in its best interest.

The following criteria will be used for evaluating Proposals for the City of Titusville and will be based on certain objective and subjective considerations as listed below:

EVALUATION CRITERIA

Criteria	Points
1. Track Record of Results	**30%**
2. Qualifications of Assigned Staff	**25%**
3. Analytical, Compliance, and Risk Management Capabilities	**20%**
4. Experience with Benefits Programs	**20%**
5. Cost and Price Transparency	**5%**
Total	**100%**

TOTAL SCORE: 100 points.

SECTION V - PROPOSAL REQUIREMENTS

PROPOSAL FORMAT

Interested proposers must ensure that the content of the proposal submittal is complete. Special attention should be given to the specific information, instructions and requirements of the Request for Proposal document to ensure responsiveness. Proposals which are incomplete or lack key information may be rejected. To help facilitate the review process, properly label each section or tab as listed below. Proposal Worksheet Attachment A must be completed. The Proposer's submittal should include the following at minimum:

Tab 1. Title Page: Include RFP #, title, firm name, contact details, and date.

Tab 2. Table of Contents: Outline proposal sections.

Tab 3. Letter of Transmittal (Limit to two (2) pages)

1. Briefly state the Proposer's understanding of the services to be provided and make a positive commitment to performing the work.
2. Give the names of the people who will be authorized to make representations for the Proposer, their titles, addresses and telephone numbers.

3. Signed by an authorized officer, with Sunbiz documentation.

Tab 4. Proposal Worksheet – Attachment A

Complete and submit the Proposal Worksheet Attachment A with its proposal. The electronic version shall be provided in MS - Word format.

Tab 5. Supplemental Overview Information Requirements

1. All supplemental information directed by Proposal Worksheet A or items addressed in a short narrative should be included in this section and clearly identified by labeling with corresponding the Letter, Section Title, and Document Description.
2. All Example Documents as directed in the Proposal Worksheet

Tab 6. Required Forms (Completed)

The following Forms must be properly executed and included in the proposal:

1. Attachment A

1) Proposal Worksheet

2. Attachment B

1) Request For Proposal Cover Sheet - Notarized
2) Addendum Acknowledgement Form
3) Consultant Affidavit Regarding Scrutinized Company List
4) Drug-Free Workplace Certification Form
5) Public Entity Crimes Form
6) E-Verify Affidavit
7) Human Trafficking Affidavit
8) Form of Non-Collusion Affidavit
9) Certification of Equal Employment Opportunity
10) Certification Regarding Debarment & Suspension

1. **Definitions**:
   a. CITY - The term "CITY" herein refers to the City of Titusville Brevard, Florida, and its duly authorized representatives.

   b. CONTRACTOR - The term "CONTRACTOR" used herein refers to any dealer/manufacturer/business organization that will be awarded a contract pursuant to the terms, conditions and quotations of the solicitation.

   c. DUE CAUSE – An applicable reason affecting and concerning the ability and fitness of the contractor(s) to perform to the specifications and requirements of the contract.

   d. HEAVY DUTY - The item(s) to which the term "HEAVY DUTY" is applied shall exceed the usual quality and/or capacity supplied with standard production equipment and shall be able to withstand unusual strain, exposure, temperature, wear and use.

   e. QUALIFIED CONTRACTOR - The best Contractor who has the capability in all respects to fully perform the Solicitation requirements, and has the financial stability, honesty, integrity, skill, business judgment, experience, facilities, and reliability necessary to assure good faith performance of the contract, as determined by reference to the Contractor's Qualification Statement, evaluations by City staff of the Contractor or its subcontractors' past performance for the City, an any other information required by City policies.

   f. RESPONSIVE CONTRACTOR - A Contractor who has submitted a Bid/proposal, which conforms in all respects to the requirements of the Solicitation package, including, but not limited to, submission of the Bid/proposal on required forms with all required information, signatures, and notarizations at the place and time specified.

   g. SOLICITATION - An Invitation for Bids, Request for Proposals, Request for Qualifications or any document used to obtain bids or proposals for the purpose of entering into a contract.

   h. USING AGENCY - The term "USING AGENCY" used herein refers to any department, division, agency, council, committee, authority or other unit in the City Government using supplies or procuring contractual services as provided for in the Purchasing Ordinance of the City of Titusville.

2. **Submittal of Solicitations – Due Date:** Bid/proposals shall be submitted utilizing the Solicitation form(s) provided herein. All Bid/proposals shall be properly executed with all applicable blank spaces completed. All corrections made by Contractor to any Bid/proposal entry must be initialed. Bid/proposals (an original and one copy) shall be submitted to the office of the Purchasing Agent no later than the date and time specified. Any bid/proposals received in Purchasing after the specified date and time will not be accepted. Bid/proposals shall be submitted in a sealed envelope prior to the time established for the opening of Bid/proposals, and the envelope shall be marked with the Solicitation number, title of Solicitation, Solicitation opening date and vendor's name and address. If submitted other than by mail, it shall be delivered to the office of the Purchasing & Contracting Division. Bid/proposals submitted by mail must be received in the office of the Purchasing & Contracting Division by the time specified herein for the Solicitation opening. The City of Titusville will take no responsibility for delay caused by poor mail delivery or miscalculation of delivery by the Proposer.

3. **Proposer's Signature:** If the Bid/proposal is made by an individual, he or she must sign his name thereon and state its principal office address or post office address, and the name and address of every other person involved in the Bid/proposal as principal. If the Bid/proposal is made by a firm or partnership, its name and principal office address or post office address must be stated as well as the name and address of each member of the firm or partnership. If the Bid/proposal is made by a corporation, the Bid/proposal must be signed by some authorized officer or agent, subscribing the name of the corporation with his own name and affixing the corporate seal. Such office or agent must also state the name of the State under which the corporation is chartered, the names and business address of the President, Secretary and Treasurer, as well as the registry with the Secretary of State of the State of Florida of such corporation for doing business in the State of Florida.
   If you have any questions regarding the execution of the signature page, please feel free to contact the Purchasing & Contracting Division at (321) 567-3698, for further clarification. Strict adherence to criteria outlined above is of the utmost importance in the finalization of agreements awarded to successful Proposers.

4. **Solicitation Opening:** Solicitation opening shall be public on the date and time specified. Sealed Bid/proposals received by an agency pursuant to invitations to Solicitation are exempt from the provisions of subsection (1) and s. 24(a), Art. I of the State Constitution until such time as the agency provides notice of a decision or intended decision pursuant to s. 120.57(3)(a) or within 30 days after Solicitation or Solicitation opening, whichever is earlier. In accordance with Florida Statute 119.071(1) (b) 2, the names of the firms submitting a competitive solicitation will be read aloud at this time of the opening. No details of the competitive solicitation will be released. Bid/proposal must be submitted on forms provided by the City. No other forms will be accepted. Fax, telephone, emailed, or verbal Bid/proposals are not acceptable and will not be considered. No Bid/proposal may be modified after opening. No Bid/proposal may be withdrawn after opening for a period of ninety (90) days unless otherwise specified.

5. Unless otherwise noted in the Solicitation document, Contractors shall submit one Bid/proposal only.

6. **Withdrawal of Bid/proposals:** Proposers may withdraw a Bid/proposal after it has been delivered to the purchasing agent any time prior to the stipulated time for opening of the Bid/proposals.

7. **Familiarity with Site Conditions:** The responsibility for the determination of accurate measurements, the extent of the work to be performed, and the conditions surrounding the performance thereof shall belong only to the Proposer. Submission of a Bid/proposal shall constitute acknowledgment by the Proposer that it is familiar with all such site conditions. The failure or neglect of a Proposer to familiarize himself with the site of the proposed work shall in no way relieve him from any obligations with respect to his Bid/proposal.

8. **Questions Regarding Specifications or Solicitation Process:** To ensure fair consideration for all Proposers, the City prohibits communication to or with any department, division, or employee during the solicitation process, except as provided in paragraph "b" below. Additionally, the City prohibits communication initiated by a Proposer to the City official or employee, evaluating or considering the Bid/proposals, prior to the time a Solicitation award decision has been made. Such communication initiated by a Proposer may be grounds for disqualification of the said Proposer from consideration of award for the Bid/proposal currently under evaluation and/or any future Bid/proposal depending on severity of the infraction.
   a. Any questions relative to interpretation of specifications or the Solicitation process shall be addressed to the Purchasing & Contracting Division, in writing. To be given consideration, such requests must be received at least five (5) business days prior to the date fixed for the opening of the Solicitation. At the City's sole discretion, inquiries received within five (5) days prior to the date set for the receipt of Solicitations may not be given consideration. Any interpretation made to prospective Proposers will be expressed in the form of an addendum to the specifications which, if issued, will be conveyed to all prospective Proposers no later than three (3) days before the date set for receipt of Bid/proposals. Oral interpretations will not be provided.
   b. It will be the responsibility of the Proposer to contact the Purchasing & Contracting Division prior to submitting a Bid/proposal to ascertain if any addenda have been issued, to obtain all such addenda, and return executed addenda or acknowledgment thereof with the Bid/proposal.

9. **Pricing/Shipment Cost**: Firm prices shall be proposed and include FOB DESTINATION, all packing, handling, shipping charges, fuel surcharges and delivery, unless otherwise indicated, to any City of Titusville department to a secure area or inside unless otherwise stipulated in the Solicitation invitation or exceptions taken by the Proposer.
   Errors: In the event of extension error(s), the unit price will prevail. In the event of addition error(s), the extended totals will prevail. In either case, the Contractor's total offer will be adjusted accordingly.
   Period of Offer Validity: Prices quoted in the bid must remain valid for a period of ninety (90) days from the date of the Solicitation opening unless stipulated otherwise in the Solicitation documents (including all issued addenda).

10. **Discounts:** Proposers may offer a discount for prompt payments. Discounts will be computed from the date of satisfactory delivery at place of acceptance and/or from receipt of correct invoice at the office specified whichever occurs last. Proposers are encouraged to propose discounts in any Bid/proposal.

11. **Meeting Specifications:** All equipment and accessories furnished under these specifications shall be new, the latest model in current production, and shall be of good quality, workmanship, and material. The Contractor represents that all equipment offered under these specifications shall meet or exceed the minimum requirements specified. Delivery specifications shall be strictly adhered to. The Contractor shall be responsible for performing the work necessary to meet City standards in a safe, neat, good, and workmanlike manner.

12. **Hold Harmless and Indemnification:**
Proposer covenants and agrees that it will indemnify and hold harmless City and all of its officers, agents, and employees from any claim, loss, damage, cost, charge or expense arising out of any act, action, neglect or omission by the Proposer, whether direct or indirect, or whether to any person or property to which the City or said parties may be subject, except that neither the Proposer nor any of its sub-Contractors will be liable under this section for damages arising out of injury or damage to persons or property directly caused by or resulting from the sole negligence of the City or any of its officers, agents or employees.

13. **Trade Names:** In cases where an item to be proposed is identified by a manufacturer's name, trade name, catalog number, or reference, it is understood that the Proposer proposes to furnish the item so identified and does not propose to furnish an "EQUAL" unless the proposed "EQUAL" is indicated in the Bid/proposal response therein by the Proposer. Generally, the reference to a name brand is intended to be descriptive but not restrictive and only to indicate to the prospective Proposer the performance and/or the operational requirements of articles or products that will be deemed acceptable. Bid/proposals on other makes or catalog numbers will be considered provided each Proposer clearly indicates prior to the Solicitation due date or states in its Bid/proposal exactly what alternative it proposes to furnish and forwards with his Bid/proposal, or prior to the Solicitation due date, a cut illustration or other descriptive material which will clearly indicate the character of the article covered in its Bid/proposal. The City reserves the right to approve as an equal, or to reject as not being equal, any article the Proposer proposes to furnish which contains major or minor variations from the specification requirements but may comply substantially therewith.
If no particular brand, model, or make is specified and if no data is required to be submitted with the Bid/proposal, the Proposer may be required to submit, before the Solicitation award, working drawings or detailed descriptive data in sufficient detail to enable the City to judge if such data and specifications are in compliance with the City's requirements.

14. **Awards:** The City will negotiate the terms of the final
15. agreement with the Proposer(s) determined to have submitted the best bid/proposal(s) under the selection criteria outlined the solicitation. If negotiations fail, the City may negotiate with other Proposer's for award of the agreement or terminate this solicitation without liability to any person. Final award will be made based solely on bid/proposal(s), which, in the City's opinion, is in the best interest of the City.

15. **Evaluation of Bid/proposals**: The City reserves the right to make any changes to this Solicitation, or to reject any and all Bid/proposals, or portions of any and all Bid/proposals, or to accept any Bid/proposal or portion thereof deemed to be in the best interest of the City, or postpone or cancel or to re-solicit this Solicitation at any time, or to waive any irregularities or informalities in this Solicitation or in the offers received as a result to this Solicitation, whenever such rejection or waiver is in the City's best interest. The City also reserves the right to request clarification or information from any Proposer.

    The City also reserves the right to reject the Bid/proposal of a Proposer who has previously failed to perform properly or complete contracts or purchase orders on time, or a Bid/proposal of a Proposer who upon investigation shows not to be in a financial or other position to properly perform the contract.

    Proposer's responsibility shall be determined only by the City. In determining responsibility, the following criteria (not prioritized), in addition to price, will be considered by the City:

    a. The ability, capacity, and skill of the Proposer to perform the services required.
    b. Whether the Proposer can perform or provide the requirements or provide the services promptly, or within the time specified, without delay or interference.
    c. The character, integrity, reputation, judgment, experience, and efficiency of the Proposer.
    d. The quality of performance of previous contracts, purchase orders or services rendered.
    e. Previous and existing compliance by the Proposer with laws and ordinances relating to contracts, purchase orders or services.
    f. The sufficiency of the financial resources as they relate to the ability of the Proposer to perform the contract, purchase order, or provide the service.
    g. The quality, availability, and adaptability of the supplies or services to the particular use required.
    h. The ability of the Proposer to provide future maintenance and service for the use of the subject matter if required by the Solicitation specifications.
    i. Whether the Proposer is in arrears to the City on a debt or is a defaulter on surety to the City or, whether the Proposers' taxes or assessments are delinquent.
    j. Whether the Proposer is in litigation or has caused the City to litigate against it or any of its associates, subsidiaries, etc. at any prior time.
    k. Such other additional criteria as may be developed for a specific solicitation.

16. **Bidder/Proposer Qualification:** The City reserves the right to conduct an inspection of the Bidder/Proposer's facility and equipment prior to the award of the Solicitation. The City will notify you in writing of our intent to conduct an inspection or survey of your facility. The City also reserves the right to inspect the equipment, parts, components, goods or supplies specified in this Solicitation.

    Bid/proposals will be considered from firms who have adequate personnel and equipment and who are so situated as to perform prompt services and who maintain the regular business hours of 8:00 a.m. to 5:00 p.m., Monday through Friday, except for holidays. The City will only consider Bid/proposals from firms who maintain current City occupational license or from firms that are licensed to conduct business in the State of Florida.

    Bid/proposals will be considered only from firms which are regularly engaged in the business as described in this Solicitation package; with a record of performance for a reasonable period of time, which have sufficient financial support, equipment, and organization to ensure that they can satisfactorily execute the services if awarded an agreement under the terms and conditions herein stated. The terms "equipment and organization" as used herein shall be construed to mean a fully equipped and well-established company in line with the best business practice in the industry and as determined by the City.

17. **Disqualification of Proposers :** Any one of the following causes may be considered as sufficient for the disqualification of a Proposer and the rejection of his Bid/proposal:

    a. Submission of more than one (1) Bid/proposal for the same work by an individual, firm, partnership, or corporation under the same or different names.
    b. Evidence of collusion among Proposers.
    c. Previous participation in collusive bidding on work for the City of Titusville, Florida.
    d. Submission of an unbalanced Bid/proposal in which the bid/proposal price for some items are out of proportion to the bid/proposal price for other items.
    e. Lack of competency of Bidder/Proposer – i.e., Bidder/Proposer will be considered ineligible if at any time during the process of receiving Bid/proposals or awarding the Contract, developments arise which – in the opinion of the City – adversely affect the Proposer's responsibility. However, the Proposer will be given an opportunity by the City to present additional evidence before final action is taken.
    f. Lack of responsibility as shown by past work judged from the standpoint of workmanship, quality control, and progress.
    g. Uncompleted work for which the Proposer is committed by Contract which, in the judgement of the City, might hinder or prevent the prompt completion of Work under this Contract if awarded to such Proposer.
    h. Being in arrears on any existing Contracts with the City, or in litigation with the City, or having defaulted on a previous Contract with the City.
    i. Promoting deliberate discriminatory practices.

    This list is a representative sample of causes for disqualification and shall not be deemed to be all-inclusive.

18. **Execution of the Purchase Order/Contract:** The successful Proposer shall, at the City's option and within fifteen (15) calendar days from the date that the notification of award is issued by the City of Titusville, enter into a purchase order or contract with the City on forms provided by the City to furnish the goods or services awarded and shall simultaneously provide any required bonds, indemnities, insurance certificates or other required documentation. Failure to comply with the established deadline for submittal of required documents may be grounds for cancellation of the award.

19. **Bid/proposal Guarantee Forfeited**: Should the successful Proposer fail or refuse to execute and deliver the contract and bond required to the Purchasing & Contracting Administrator, within the allotted time, shall forfeit to the City the Bid/proposal

guarantee submitted with the Bid/proposal, as liquidated damages to offset project costs, for such failures or refusal.

The City requires, when entering into a contractual agreement with a corporation licensed to do business in the State of Florida, that such agreement be signed by a corporate official or principal (i.e., President, Vice President, Secretary, Treasurer, or other authorized official, e.g., Executive Director) with the corporate seal affixed. If the aforementioned corporate officers or the corporate seal are readily available, a letter of authorization from a corporate official or principal may be submitted in lieu thereof. Such letter of authorization must be on corporate stationery, must clearly state that the person who signed the referenced agreement is duly authorized to enter into such an agreement on behalf of the corporation and must be signed by said corporate officials. Failure to submit letters of authorization within two (2) weeks after notification of award may result in cancellation of award.

In the case of a partnership, the agreement must be signed by the general or managing partner and notarized as outlined above. In the case of a sole proprietorship the owner must sign the agreement and have such execution notarized.

20. **Safety Warranty**: The selling dealer, distributor, Contractor, and manufacturer shall be responsible for having compiled with all Federal, State and local standards, regulations, and laws concerning the equipment specified and the use thereof, applicable and effective on the date of manufacture including safety and environmental standards as apply to both private industry and governmental agencies.

21. **Warranty:** The Contractor agrees that, unless otherwise specified, the supplies and/or services furnished under this Bid/proposal shall be covered by the most favorable commercial warranty the Contractor gives to any customer for comparable quantities of such supplies and/or services and that the rights and remedies provided herein are in addition to and do not limit any rights afforded to the City by any other provision of this Solicitation.

22. **Florida Prompt Payment Act**/Invoicing and Payment: Vendors shall be paid in accordance with the State of Florida Prompt Payment Act, Section 218.70 of the Florida Statutes, upon submission of proper invoice to City user agency. Invoices are to be billed at the prices stipulated on the purchase order or contract and as outlined in the Vendor's Bid/proposal. All invoices must show the City of Titusville purchase order number.

23. **Award Dispute Resolution:** Pursuant to Florida Statutes, Chapter 120, a written notice of protest must be submitted or delivered to the Purchasing & Contracting Division within 72 hours after one of the following, whichever occurs first: (i) posting of the Solicitation tabulation stating the intended award decision or (ii) after receipt of notice by the City of intended award. The nature of protest must be followed, within 10 days of submittal of such written notice, by a formal written notice fully detailing all elements, which promulgated the protest.

Solicitation award challenges or Solicitation award protests shall be submitted or delivered in writing to the office of the Purchasing & Contracting Administrator who (as authorized by the City Manager) is the administrative head of the Purchasing & Contracting Division. The Purchasing & Contracting Administrator will gather evidence and discern facts and make a recommendation to the City Manager. The City Manager will make the final decision on the matter. All decisions of the governing body are final.

24. **Solicitation Award Cancellation:** The City reserves the right to withdraw all Solicitation awards at any time for any reason.

25. **Suspension or Rescindment of Bidding Privileges:** The City of Titusville may remove any vendor, contractor, supplier, service provider or other entity from its active vendor's list for violation of one or more of the issues listed below.
    - Continued failure to deliver products, services, work in accordance with the terms and conditions of the engagement documents.
    - Disregard for the prudent use of taxpayer's funds.
    - Causing the City to litigate.
    - Shoddy workmanship.
    - Deliberate attempts to deceive the City.

26. **Legal Requirements:** Federal, State, County and local laws, ordinances, rules and regulations that in any manner affect the item(s) to be procured hereby shall be duly observed. Lack of knowledge by the Proposer will in no way be cause for relief from responsibility and abidance with the contract documents. Failure to comply with all applicable legal requirements shall render your Bid/proposal as non-responsive.

27. **Conflict of Interest**: The award hereunder is subject to all applicable portions of Chapter 112, Florida Statutes. All Proposers must disclose with their Bid/proposal the name of any officer, director, or employee who is also an employee of the City of Titusville. Further, all Proposers must disclose the name of any City of Titusville employee who owns, directly or indirectly, or has an interest in one or more of the Proposer's firm(s) or any of its branches.

28. **Right to Audit Records:** The City shall be entitled to audit the books and records of the contractor or subcontractor to the extent that such books and records relate to the performance of the contract or purchase order or any supplement or amendment to such contract or purchase order. Such books and records shall be maintained by the contractor or subcontractor for a period of five (5) years from the date of final payment under the Purchase Order unless a shorter period is otherwise authorized in writing by the City.

29. **Fiscal Year Funding Appropriation**:
    a. Specified Period: Unless otherwise provided by law, a purchase order for supplies or a contract for services may be entered into for any period of time deemed to be in the best interest of the City, provided the term of the purchase order or contract and conditions of renewal or extension, if any, are included in the solicitation and funds are available for the initial fiscal period of the purchase order or contract. Payment and performance obligations for succeeding fiscal periods shall be subject to the annual appropriation by City Council.
    b. Cancellation Due to Unavailability of Funds in Succeeding Final Periods: When funds are not appropriated or otherwise made available to support continuation of performance in a subsequent fiscal period, the purchase order or contract shall be cancelled and the contractor shall

be entitled to reimbursement for the reasonable value of any work performed to the date of cancellation.

30. **Florida Statutes on Drug-Free Workplace Programs:** In case of tie Bid/proposals, preference must be given to vendors submitting a certification with their bid/proposal certifying they have a drug-free workplace in accordance with Section 287.087, Florida Statutes. This form is included with this Solicitation and must be completed and returned with your Bid/proposal.

31. **Public Entity Crime**: A person or affiliate who has been placed on the convicted Proposer list following a conviction for a public entity crime may not submit a bid, proposal, or reply on a contract to provide any goods or services to a public entity; may not submit a bid, proposal, or reply on a contract with a public entity for the construction or repair of a public building or public work; may not submit bids, proposals, or replies on leases of real property to a public entity; may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity; and may not transact business with any public entity in excess of the threshold amount provided in s. 287.017 for CATEGORY TWO for a period of 36 months following the date of being placed on the convicted Proposer list.

32. **Discriminatory Vendor List:** An entity or affiliate placed on the Discriminatory Vendor List shall not submit a Bid/proposal for a contract to provide goods or services to a public entity, shall not submit a Bid/proposal on a contract with a public entity for the construction or repair of a public building or perform any public work, shall not submit Bid/proposals for leases of real property to a public entity, shall not award or perform work as a contractor, supplier, subcontractor, or consultant under any contract with any public entity, and shall not transact business with any public entity per 287.134(3)(d), Fla. Stat.

33. **Scrutinized Companies:** Awarded Contractor shall certify that it and its subcontractors are not on the Scrutinized Companies that Boycott Israel List. Pursuant to Section 287.135, F.S. If the Agreement is for more than $1,000,000 the Contractor further certifies that it and its subcontractors are also not on the Scrutinized Companies with Activities in Sudan, Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, or engaged with business operations in Cuba or Syria as identified in Section 287.135, F.S.
For Contracts of any amount, if the City determines the Contractor submitted a false certification under Section 287.135(5) of the Florida Statutes, or if the Contractor has been placed on the Scrutinized Companies that Boycott Israel List, or is engaged in a boycott of Israel, the City shall either terminate the Contract after it has given the Contractor notice and an opportunity to demonstrate the City's determination of false certification was in error pursuant to Section 287.135(5)(a) of the Florida Statutes, or on a case-by-case basis the City may choose to maintain the Contract if the conditions of Section 287.135(4) of the Florida Statutes are met. For Contracts $1,000,000 and greater, if the City determines the Contractor submitted a false certification under Section 287.135(5) of the Florida Statutes, or if the Contractor has been placed on the Scrutinized Companies with Activities in the Sudan List, or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, the City shall either terminate the Contract after it has given the Contractor notice and an opportunity to demonstrate the City's determination of false certification was in error pursuant to Section 287.135(5)(a) of the Florida Statutes, or on a case-by-case basis the City may choose to maintain the Contract if the conditions of Section 287.135(4) of the Florida Statutes are met.

The Contractor agrees to observe the above requirements for applicable subcontracts entered into for the performance of work under this Agreement.

As provided in Subsection 287.135(8), F.S., if federal law ceases to authorize these contracting prohibitions, this section shall become inoperative and unenforceable.

34. **Cancellation And Reinsurance:** If any insurance should be canceled or changed by the insurance expiring during the period of this Solicitation award, the Contractor shall be responsible for securing other acceptable insurance to provide the coverage specified in the Solicitation to maintain continuous coverage during the life of the contract.

35. **Incurred Cost:** City of Titusville is not liable for any cost incurred by any Contractor prior to an award. Costs for developing a response to this Solicitation are entirely the obligation of the Contractor and shall not be chargeable in any manner to the City of Titusville.

36. **Subcontractors:** The Contractor shall be fully responsible for all acts and omissions of his subcontractors and of persons and organizations directly or indirectly employed by them and of persons and organizations for whose acts and omissions of persons directly employed by him.

37. **Litigation Venue:** All litigation shall take place either in the State Courts of Florida, wherein venue shall lie in Brevard County, Florida, or in the Federal Courts wherein venue shall lie in the Middle District in and for the State of Florida. The Contractor expressly waives venue in any other location.

38. **Addition, Deletion, Or Modification Of Services:** The City reserves the right at its sole discretion to increase, decrease, or delete any portion of this agreement/contract at any time without cause, and if such right is exercised by the City, the total fee shall be reduced by a prorate basis. If work has already been accomplished on the portion of the contract to be increased, decreased, or deleted, the contractor shall be paid for the correct portion on the basis of the estimated percentage agreed upon by the City, the contractor, and the contract manager upon completion of such portion.

39. **Operation During Dispute:** In the event the City has not canceled the contract in accordance with the terms of the contract, and there remains a dispute between the Contractor and the City, the Contractor agrees to continue to operate and perform under the terms of the contract while such dispute is pending. Further, the Contractor agrees that, in the event a suit is filed for injunction or other relief, it will continue to operate the system until the final adjudication of such suit by the court.

40. **Contract Termination:** The contract resulting from this Solicitation shall commence upon issuance and acceptance of the fully executed contract. The City user agency shall issue

orders against the contract on an as needed basis. The contract may be canceled by the Contractor, for good cause, upon ninety (90) days prior written notice. The City retains the right to terminate the contract, in part or in its entirety, with or without good cause, upon thirty (30) days prior written notice or as stated.

41. **Equal Opportunity Employer:** The City is an Equal Employment Opportunity (EEO) employer and as such encourages all contractors or vendors to voluntarily comply with EEO regulations with regards to gender, age, race, veteran status, country of origin, and creed. In addition, the contractor or Proposer or anyone under his employ shall comply with all applicable rules, regulations and promulgation's thereby pertaining to the avoidance or appearance of sexual harassment or on the job discrimination. The contractor or Proposer shall maintain a working environment free of discrimination or unwelcome actions of a personal nature. Any sub-contracts entered into shall make reference to this clause with the same degree of application being encouraged. When applicable, the contractor or Proposer shall comply with all new State and Federal EEO Regulations.

42. **Confidentiality of Bid/proposals:** Florida Statute 119.071 provides that sealed bids, proposals or replies received by the agency (City) pursuant to a competitive solicitation are exempt from s. 119.07(1) and s. 24(a) Art. 1 of the State Constitution (becoming a public record) until such time as the City provides notice of its intended decision or until 30 days after opening bids, proposals, or final replies, whichever is earlier.
In addition, if the City rejects all bids, proposals, or replies submitted in response to a competitive solicitation and the City concurrently provides notice of its intent to reissue the competitive solicitation, the rejected bids, proposals or replies remain exempt from becoming a public record until such time as the City provides notice of its intended decision concerning the reissued competitive solicitation or until the City withdraws the reissued competitive solicitation. A bid, proposal or reply is not exempt for longer than 12 months after the initial City notice rejecting all bids, proposals or replies.

43. **Local Preference:** (Ordinance No. 6-1994 and as amended by Ordinances No. 10-1995, 46-2009 and 48-2018). The City of Titusville grants preference to those vendors, contractors or service providers whose primary business location is within the physical limits of the City of Titusville or Brevard County and have held a valid occupational license (Business Tax Receipts) for a period of no less than one year. Local business shall be defined in accordance with said ordinance which is available for review in the City Clerk's or Purchasing & Contracting Administrator's office and is available at: https://library.municode.com/fl/titusville

Local City of Titusville Preference:

a) Five (5) percent of the low bid amount for project awards up to and including $500,000.00,
b) Three (3) percent of the low bid amount for project awards greater than $500,000.00 up to and including $1,000,000.00, and
c) Two (2) percent of the low bid amount for project awards greater than $1,000,000.00 up to and including $1,500,000.00.

Local Brevard County Preference:

a) Two (2) percent of the low bid amount for project awards up to and including $500,000.00,
b) One (1) percent of the low bid amount for project awards greater than $500,000.00 up to and including $1,000,000.00, and
c) Sixty six hundreds (0.66) of one percent of the low bid amount for project awards greater than $1,000,000.00 up to and including $1,500,000.00.

In the event that two or more firms are eligible for award under this policy, the award will be decided as follows:

a) If both firms are located in the City of Titusville, the firm that submitted the lowest price is awarded the contract or procurement,
b) If one firm is located in the City of Titusville and the other firm is not, but it is located within Brevard County, the City of Titusville firm is awarded the contract or procurement,
c) If both firms are located within Brevard County (none within the City of Titusville), the firm that submitted the lowest price is awarded the contract or procurement.

44. **Lobbying:** Contractors are not permitted to lobby any City Council member. Lobbying is defined as any action taken by an individual, Contractor, association, joint venture, partnership, syndicate, corporation, and all other groups who seek to influence the governmental decision of a City Council member on the award of this contract. Any Contractor or individuals that lobby on behalf of a Proposer may by their actions cause their Proposer's submission to be rejected/disqualified.

45. **Contract Amendments/Change Orders** The City may make changes to the resulting Agreement, in accordance to City Purchasing Policy, by altering, adding to, or deducting from the services without liability to the Vendor, except for the reasonable cost of any additional work. All such work within the capacity of the Vendor to perform shall be performed pursuant to the terms hereof. All change orders will be processed in writing with both parties' signatures of agreement.

46. **E-Verify:** As a condition precedent to entering into an agreement as a result of this Solicitation, and in compliance with Section 448.095, Fla. Stat., Contractor, and its subcontractors shall, register with and use the E-Verify system to verify work authorization status of all employees hired after January 1, 2021.
1. Contractor shall require each of its subcontractors to provide Contractor with an affidavit stating that the subcontractor does not employ, contract with, or subcontract with an unauthorized alien. Contractor shall maintain a copy of the subcontractor's affidavit as part of and pursuant to the records retention requirements of this agreement.
2. The City, Contractor, or any subcontractor who has a good faith belief that a person or entity with which it is contracting has knowingly violated Section 448.09(1), Fla. Stat. or the provisions of this section shall terminate the contract with the person or entity.
3. The City, upon good faith belief that a subcontractor knowingly violated the provisions of this section, but Contractor otherwise complied, shall promptly notify Contractor and Contractor shall immediately terminate the contract with the subcontractor.
4. A contract terminated under the provisions of this section is not a breach of contract and may not be considered such. Any contract termination under the provisions of this section may be

challenged pursuant to Section 448.095(2)(d), Fla. Stat. Contractor acknowledges that upon termination of this agreement by the City for a violation of this section by Contractor, Contractor may not be awarded a public contract for at least one (1) year. Consultant further acknowledges that Contractor is liable for any additional costs incurred by the City as a result of termination of any contract for a violation of this section.

5. Subcontracts: Contractor or subcontractor shall insert in any subcontracts the clauses set forth in this section, including this subsection, requiring the subcontractors to include these clauses in any lower tier subcontracts. Consultant shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in this section.

47. **Contingent Fees:** The Successful Proposer(s) warrants that he or she has not employed or retained any company or person, other than a bona fide employee working solely for the Successful Vendor(s), to solicit or secure this Agreement and that he or she has not paid or agreed to pay any person, company, corporation, individual, or Contractor, other than a bona fide employee working solely for the Successful Vendor(s) any fee, commission, percentage, gift, or other consideration contingent upon or resulting from the award or making of this Agreement. In the event of a breach of this provision, the City of Titusville shall have the right to terminate this Agreement without further liability, and at its discretion, deduct from the contract price, or otherwise recover, the full amount of any such fee, commission, percentage, gift, or consideration paid in breach of this Agreement.

48. **Social, Political, Or Ideological Interests:** Pursuant to Florida Statutes § 287.05701, the City of Titusville shall not request documentation regarding, consider, or give preference based upon, a vendor's social, political, or ideological interests when determining the vendor's qualifications.

49. **Prohibited Telecommunications Equipment.** Contractor represents and certifies that it and its applicable subcontractors do not and will not use any equipment, system, or services that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system, as such terms are used in 48 CFR § 52.204-24 through 52.204-26. By executing a Contract, Contractor represents and certifies that Contractor and its applicable subcontractors must not provide or use such covered telecommunications equipment, system, or services for any scope of work performed for the City for the entire duration of this Contract. If Contractor is notified of any use or provisions of such covered telecommunications equipment, system, or services by a subcontractor at any tier or by any other source, Contractor must promptly report the information in 40 CFR § 52.204-25(d)(2) to City.

50. **Anti-Trust Violations.** By entering into a Contract, Contractor certifies that at the time of entering into a Contract, neither it nor its affiliate(s) are on the anti-trust violator vendor list (electronically published and updated quarterly by the State of Florida) following a conviction or being held civilly liable for an antitrust violation. False certification under this paragraph or being subsequently added to that list will result in termination of this Contract, at the option of the City consistent with Section 287.137, Florida Statutes, as amended.

51. **Foreign Gifts And Contracts.** The Contractor must comply with any applicable disclosure requirements in Section 286.101, Florida Statutes. *See Section 286.101(7)(a).*

52. **Human Trafficking Affidavit**. Upon execution of a Contract, Contractor shall submit a sworn statement to the Client on the attached affidavit form and incorporated herein, in accordance with the provisions of Florida Statute 787.06(13).

53. **Foreign Gifts And Contracts.** The CONTRACTOR must comply with any applicable disclosure requirements in Section 286.101, Florida Statutes. *See Section 286.101(7)(a).*

54. **Purchasing Contracts With Other Government Entities:** The City permits the awarded Contractor(s) to extend the pricing, terms and conditions of this solicitation to other governmental entities at the Contractor's discretion. Each governmental entity that utilizes this solicitation or resulting contract will be responsible for execution of its own requirements with the awarded Contractor(s).

55. **Force Majeure**: Neither party shall be responsible for its failure to perform due to causes beyond its reasonable control, such as acts of God, fire, theft, war, riot, embargoes or acts of civil or military authorities. If delivery is to be delayed by such contingencies, Contractor shall immediately notify City in writing and City may either: (i) extend time of performance; or (ii) terminate all or part of the uncompleted portion of the Purchase Order at no cost to City.

56. **PUBLIC RECORDS**. Records of the Contractor that are made or received in the course of performance of the Contractor's obligations under this Contract may be public records that are subject to the requirements of Chapter 119, Fla. Stat. and accordingly Contractor shall keep and maintain public records that ordinarily and necessarily would be required by the City in order to perform the service. However, some records may be confidential or exempt from disclosure under Chapter 119, Fla. Stat. In the event the Contractor receives a request for any such records, the Contractor shall notify the City and comply with Chapter 119, Fla. Stat. The Contractor shall not prepare any news or press release in any way related to this Contract, without the City's written consent. Contractor hereby agrees to comply with the following:

a) As provided in Section 119.0701, Florida Statutes, the Contractor is required to, and by executing this Contract the Contractor agrees to:

1) Keep and maintain public records that ordinarily and necessarily would be required by the City in order to perform the service.

2) Upon request from the City's custodian of public records, provide the City with a copy of the requested records or allow the records to be inspected or copied within a reasonable time at a cost that does not exceed the cost provided in Chapter 119.07, Florida Statutes or as otherwise provided by law.

3) Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law for the duration of the contract term and following the completion of the contract if the Contractor does not transfer the records to the City.

4) (Upon completion of the contract, transfer, at no cost to the City, all public records in possession of the Contractor

or keep and maintain public records required by the City to perform the service. If the Contractor transfers all public records upon completion of the contract, Contractor shall destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. If Contractor keeps and maintains public records upon completion of the contract, Contractor shall meet all applicable requirements for retaining public records. All records stored electronically must be provided to the City upon request from the City's custodian of public records in a format that is compatible with the information technology systems of the City.

b) The term "public record" as used in this provision includes all documents, papers, letters, maps, books, tapes, photographs, films, sound recordings, data processing software, or other material, regardless of the physical form, characteristics, or means of transmission, made or received pursuant to law or ordinance or in connection with the transaction of official business by the City.

IF CONTRACTOR HAS ANY QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES TO CONTRACTOR'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS CONTRACT, CONTACT THE CITY'S CUSTODIAN OF PUBLIC RECORDS AT 321-567-3682, wanda.wells@titusville.com, 555 S. Washington Ave., Titusville FL 32796.

57. CLOUD-BASED SERVICES. The following provisions apply if this Contract is for cloud-based services.

a) **Content Ownership and Use**. Contractor shall agree that data entered into the Contractor's cloud-based service system (the "Content") is owned by the City and shall be returned to City promptly upon demand in a format acceptable to the City and at no charge. Content shall not be withheld for non-payment. Upon successful transfer of Content to City, Contractor will destroy Content as directed by City upon the City's authorization. Contractor's access to Content is limited such that the City grants Contractor a limited, royalty-free, non-exclusive, non-transferable and non-sublicensable license to process Content only in the United States as instructed by City and limited to the City's benefit.

b) **Confidentiality.** If Contractor's employees or representatives are granted access to any of City's computer networks or systems (including, but not limited computer systems, application programs and databases), Contractor shall treat all of City's data and information accessed from such system(s) as City's confidential information. In addition, (i) Contractor, Contractor's employees and representatives will not use or disclose for any purpose any aspect or portion of third party data or information which Contractor may access for City's computer system(s), unless Contractor first obtain the third party's written consent; and (ii) Contractor shall make no electronic or hard copies of City's information extracted from City's computer system(s) unless specifically requested to do so by City, in which case Contractor will clearly mark and treat the information as "City Confidential". Contractor shall only provide copies to Contractor's employees or representatives within City's facility having a direct need to know. The obligations stated in this section shall survive the expiration or termination of this Contract.

c) **Data Security.** Contractor is responsible for safeguarding City data and Content from unauthorized access. All City data and Content will be stored, processed, and maintained in accordance with state and federal privacy and data protection laws and solely in data centers located in the United States. Contractor agrees to immediately notify city of any unauthorized use, copying, or disclosure of the Content or portal accounts of which Contractor becomes aware and agrees to immediately take such actions as are necessary to end and prevent any such use, copying, or disclosure. Contractor acknowledges and agrees that any unauthorized use, copying or disclosure may cause immediate and irreparable injury to City or to third parties, and in such event, City may seek and obtain injunctive relief, without bond or other security, in addition to other remedies available at law and in equity.

d) **Indemnification for Intellectual Property.** Contractor shall defend, indemnify, and hold City and its employees, officers, agents, representatives, and subcontractors harmless from any costs, expenses (including reasonable attorneys' fees), losses, damages, or liabilities incurred because of or actual or alleged infringement of any patent, copyright, trade secret, trademark, maskwork, copyright, or other proprietary right of any third party, arising out of the use or sale of Contractor's cloud-based services (other than for liability proved to be the fault of City). Contractor's indemnification under this subsection applies only to: (i) unmodified software or cloud-based service licensed to City; (ii) software or cloud-based service modified by Contractor for City; and (iii) software or cloud-based service modified with Contractor's express permission. If a third party's claim endangers or disrupts City's use of the cloud-based service, Contractor shall, at City's option and at no charge to City, (a) replace the cloud-based service with a compatible, functionally equivalent and non-infringing product; (b) modify the cloud-based service to avoid the infringement; (c) obtain a license so City may continue use of the cloud-based service for the Contract term; or if these options are commercially unreasonable (d) return a pro-rata portion of the applicable fee paid by City.

e) **Subscription Term.** The beginning of the term of the initial subscription is subject to availability to the City of the contracted cloud based service and the parties agree that payment obligations for the license to use the cloud based service shall not apply unless and until the contracted cloud based service is available for use to the City.

f) **Backup and Recovery of Data.** Contractor is responsible for maintaining a backup of the City data and content and for an orderly and timely recovery. Contractor shall maintain a contemporaneous backup of City Content that can be recovered within a reasonable period of time.

g) **Waiver of Limitation of Liability.** Contractor waives any limitation of liability in the Agreement for damages, costs and expenses resulting from Contractor's breach of confidentiality or data security obligations, claims for which the Contractor is insured and damages, costs and expenses payable under the Contractor's indemnification obligations.

ATTACHMENT A – PROPOSAL WORKSHEET
EMPLOYEE BENEFITS & HR CONSULTING SERVICES
PROPOSAL #CO-26-P-001/TB

The proposal package should be kept as brief as possible, however, with some items a narrative may be required and may be included in the proposal **Tab 5** labeled with corresponding the Letter, Section Title, and Document Description and noted here in as attached in "Tab 5".

A. Company Qualifications

1. Provide the following information about your company:

Company Information	Response
Company Name	
Service Center Location(s) (City, State)	
Primary Contact for RFP	
Primary Contact Email	
Primary Contact Telephone	
Years of providing Benefits & HR Consulting Services	
List Accreditations, professional distinctions, industry awards, recognitions and/or certifications.	

2. List the personnel your company plans to assign the City's account to for the Contract if awarded:

Role	Name	Location	Years with Company	Current Assigned Accounts	Credentials
Account Executive					
Account Manager					
Administrative Contact					
Implementation Manager					

3. List three (3) to five (5) client contract references of your Company which is of similar size and scope of services and has been awarded within the past five (5) years.

Organization	Contact Person	Title	Telephone	Email	# Eligible Subscribers	Years as Client

4. Minimum Qualifications

Requirement	YES Supporting Details or Example	NO
Proposers must be registered in Florida (www.sunbiz.org), to conduct business in the State of Florida		
A minimum of five (5) years of experience providing employee benefits consulting services to public-sector or private entities.		
Hold a professional certification in employee benefits such as Certified Employee Benefits Specialist (CEBS), Health Rosetta Certified, or Certified Benefits Professional (CBP).		
Experience supporting self-funded or partially self-funded employer sponsored medical, dental, vision and life benefit plans to include core and voluntary products		
Documented experience with the preparation or assistance with preparation of solicitation of employee benefits.		
Ability to provide services without conflicts of interest and in a vendor-neutral advisory capacity. (Ensures services are delivered without undue influence or competing interest.)		

B. Company History and Culture - Respond to questions as directly as possible along with any supporting information you feel will be pertinent to evaluate these questions.

Question	Response
Provide a brief history of your Company.	
Describe the ownership structure of your Company.	
Are you a Broker, Consultant, or Advisor? Please explain this in detail as to what your answer means.	

Tell us about your overall approach to making our health plan more responsive to our employees' needs at a lower cost.	
Provide a description of what your firm considers to be a High-Performance Health Plan.	
What is the average number of clients assigned to a service team or account lead at any given time? Please explain the make up of the workload and how your firm ensures quality service and attention is provided to all accounts.	

C. Background and Experience

Requirement	Response
Describe attributes that make you and your firm a valuable strategic partner.	
List all Key Personnel who will be assigned to the City's account. Describe their background as a Consultant and Benefits Advisor. Include resumes or Curriculum Vitae (CVs)	
Provide a list of roles and typical team that would be assigned to the City. Provide a summary of roles and distribution of responsibilities	
Provide two (2) past scenarios that demonstrate your approach to serving plan member needs and providing healthcare services at a fair cost? Include how you've helped improve ROI on their benefits cost and what the ROI results were.	
Describe how your firm operates as Fiduciary and Good Steward of the health plan dollars?	
Provide summaries of how your firm implemented components of traditional Health Plans (EPO, HMO, PPO) and high-performance health plans ,including how your firm selected the strategies and partners, how your firm enabled successful implementation, and how your firm monitored performance and made ongoing improvements for minimum of three (3) Clients within the past five (5) years. (with historical trend data provided For example, changes in PEPM trend/improving health and reducing costs)	

D. Strategic planning

Requirement	Response
Describe your firm's approach to strategic planning of taking your existing clients through Plan design changes such as: Transition from a traditional plan to a high-performance Plan with the principles of delivering elevated benefits while reducing costs.	
Provide the firm's standard template project plan that covers architecting, underwriting, and implementing phases for clients seeking to adopt a high-performance health plan.	
What percentage of the firm 's clients do you currently support through your strategic planning approach?	
Explain your firm's strategy to balance cost control with offering competitive, attractive benefits?	
Have you or your firm implemented high-performance components? How many have you implemented with your current clients? ? Please put the number of clients next to each component that you have implemented: Chart is below:	

High-Performance Component	Effective Date Component was Implemented	Number of Clients
Transparent Advisor Relationship		
High Performance Plan Design, Docs and Risk Management		
Independent, Active Plan Administration and Oversight		
Value-Based Primary Care + Patient Stewardship		
Transparent Open Networks (Direct Contracts and Reference-Based Pricing)		
Major Specialties and Outlier Patients		
Transparent Pharmacy Benefits		
Enabling Technology		

E. Clients

Requirement	Response
How many of your firm's clients are fully insured vs. level-funded vs. self- funded?	
How many of your firm's clients offer HMO, EPO, PPO, and HPN?	
Does the firm have healthcare provider organizations as current clients? If so, please list all healthcare provider clients in Florida	
Describe at least two innovative strategic solutions you and your firm have implemented for clients that highlight your benefits consulting expertise.	

F. Tools and Technology

Requirement	Response
Please describe all the administrative and health plan software or tools that you or your team use to support the ongoing and active management of your employer group clients.	
Do you provide an online Benefits Enrollment platform for the City Employees to enroll and manage their benefits? If yes, what is he name and can it be interfaced with an ERP/HRIS system?	
Describe your use of technology to support online employee services and education.	

G. Services

Requirement	Response
Provide an overview of your account support and administration services, including enrollment coordination, proactive member communication and ongoing support for City employees.	
Describe your capabilities in plan member communications, and to demonstrate your plan member communication, include two scenarios where you helped a plan member with a healthcare bill, lower healthcare costs, and/or helped them find a higher value provider	
Provide 2 scenarios that demonstrate your capabilities in ongoing plan performance monitoring and claims experience analysis that provided insight to adjust the plan strategy for a current client.	
Describe your consulting and educational services in the area of compliance	
Describe how your firm influences the community in transforming to adopt a new plan structure for increased benefits and cost savings.	

H. Cost of Services

1. Fee Proposal: Consulting fees must be guaranteed for the initial 36-month term. Adjustments may be requested in accordance to the terms of this solicitation for the optional renewal periods and must be requested in writing submitted to the Purchasing & Contracting Office a minimum of 180 days before the contract anniversary, to allow for proper budget appropriations.

	Required			**Optional** (*if willing to offer price lock*)	
	2026-2027	**2027-2028**	**2028-2029**	**2029-2030**	**2030-2031**
Basic Services Annual Fixed Fee: Including all General Service, Technical Services, Procurement Services, and Contract Services					
Enhanced Services					
Not-to-exceed reimbursable expense					
Projected cost for any sub-contractors, software, ar other cost over and above the fixed fee quote as line item pricing	Provide Line-Item Pricing on Separate Sheet				
OPTIONAL SERVICES: As needed services	Attach a Fee Schedule being offered including Position Name, Qualifications required, hourly rate being offered				

I. Examples

Example RFP for Group Medical – Self Funded Plan		
Example Invitation to Bid for Voluntary Vision Plan		
Example comprehensive evaluation reports		
Example executive summary		
Example Written Claims & Performance Report		

J. Disclosures

List any actual or potential conflicts of interest.	
List all direct and indirect compensation, including commissions, overrides, contingent compensation, or other remuneration received from benefit vendors including the firm name and the benefit details.	
Any litigation, claims, or regulatory actions within the past five (5) years related to employee benefits consulting services.	
Identification of all subcontractors or affiliates proposed to perform services.	

K. Additional Information

Please share any additional information you would like. If you attach any materials, please include an outline describing the separate materials and include it is Tab 5.	

Addendum Acknowledgment

By signing each line below, Bidder acknowledges that the corresponding addenda have been received and are included in this solicitation packet:

☐ Addendum 1 _____ Dated _____

☐ Addendum 2_____ Dated _____

☐ Addendum 3_____ Dated _____

☐ Addendum 4_____ Dated _____

CONTRACTOR AFFIDAVIT REGARDING SCRUTINIZED COMPANY LIST

Awarded Contractor shall certify that it and its subcontractors are not on the Scrutinized Companies that Boycott Israel List. Pursuant to Section 287.135, F.S. If the Agreement is for more than $1,000,000 the Contractor further certifies that it and its subcontractors are also not on the Scrutinized Companies with Activities in Sudan, Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, or engaged with business operations in Cuba or Syria as identified in Section 287.135, F.S. For Contracts of any amount, if the City determines the Contractor submitted a false certification under Section 287.135(5) of the Florida Statutes, or if the Contractor has been placed on the Scrutinized Companies that Boycott Israel List, or is engaged in a boycott of Israel, the City shall either terminate the Contract after it has given the Contractor notice and an opportunity to demonstrate the City's determination of false certification was in error pursuant to Section 287.135(5)(a) of the Florida Statutes, or on a case-by-case basis the City may choose to maintain the Contract if the conditions of Section 287.135(4) of the Florida Statutes are met. For Contracts $1,000,000 and greater, if the City determines the Contractor submitted a false certification under Section 287.135(5) of the Florida Statutes, or if the Contractor has been placed on the Scrutinized Companies with Activities in the Sudan List, or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, the City shall either terminate the Contract after it has given the Contractor notice and an opportunity to demonstrate the City's determination of false certification was in error pursuant to Section 287.135(5)(a) of the Florida Statutes, or on a case-by-case basis the City may choose to maintain the Contract if the conditions of Section 287.135(4) of the Florida Statutes are met.

The Affiant, by virtue of the signature below, certifies that:

1. The Business address of _____ (name of bidder or contractor)
   is_____.
2. My relationship to _____ (name of bidder or contractor) is_____ (relationship such as sole proprietor, partner, president, vice president).
3. I understand that "Boycott of Israel" has the same meaning as defined in §215.4725, Florida Statutes, and means refusing to deal, terminating business activities, or taking other actions to limit commercial relations with Israel, or persons or entities doing business in Israel or in Israelicontrolled territories, in a discriminatory manner. A statement by a company that it is participating in a boycott of Israel, or that it has initiated a boycott in response to a request for a boycott of Israel or in compliance with, or in furtherance of, calls for a boycott of Israel, may be considered by the State Board of Administration to be evidence that a company is participating in a boycott of Israel. The term does not include restrictive trade practices or boycotts fostered or imposed by foreign countries against Israel.
4. I understand that "business operations" means, for purposes specifically related to Cuba or Syria, engaging in commerce in any form in Cuba or Syria, including, but not limited to, acquiring, developing, maintaining, owning, selling, possessing, leasing, or operating

equipment, facilities, personnel, products, services, personal property, real property, military equipment, or any other apparatus of business or commerce.

5. _____ (name of the bidder or contractor) is not on the Scrutinized Companies that Boycott Israel List, created pursuant to s. 215.4725, Florida Statutes, or is engaged in a boycott of Israel.
6. _____ (name of the bidder or contractor) is not on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, created pursuant to s. 215.473, Florida Statutes.
7. _____ (name of the bidder or contractor) is not engaged in business operations in Cuba or Syria.

_____
Signature

_____
Printed Name

_____
Title

_____
Name of bidder or contractor

Notary Public Information

STATE OF _____
COUNTY OF _____

Sworn to (or affirmed) and subscribed before me by means of ☐ physical presence or ☐ online notarization, this_____ day of _____,_____ , by _____.
(day) (month) (year) (name of person acknowledging)

_____
Notary Public Signature

(Affix Notary Stamp or Seal) _____

Print, Type or Stamp Name of Notary

My commission expires: _____

DRUG-FREE WORKPLACE CERTIFICATION

In case of tie bids, preference must be given to vendors submitting a certification with their bid/ proposal certifying they have a drug-free workplace in accordance with Section 287.087, Florida Statutes. The drug-free certification form below must be signed and returned with your bid.

In order to have a drug-free workplace program, a business shall:

(1) Publish a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the workplace and specifying the actions that will be taken against employees for violations of such prohibition. (2) Inform employees about the dangers of drug abuse in the workplace, the business' policy of maintaining a drug-free workplace, any available drug counseling, rehabilitation, and employee assistance programs, and the penalties that may be imposed upon employees for drug abuse violations. (3) Give each employee engaged in providing the commodities or contractual services that are under bid a copy of the statement specified in the first paragraph. (4) In the statement specified in the first paragraph, notify the employees that, as a condition of working on the commodities or contractual services that are under bid, the employee will abide by the terms of the statement and will notify the employer of any conviction of, or plea of guilty or nolo contendere to, any violation of chapter 893 or of any controlled substance law of the United States or any state, for a violation occurring in the workplace no later than five (5) days after such conviction. (5) Impose a sanction on, or require the satisfactory participation in a drug abuse assistance or rehabilitation program if such is available in the employee's community, by any employee who is so convicted. (6) Make a good faith effort to continue to maintain a drug-free workplace through implementation of this section.

As the person authorized to sign the statement, I certify that this firm complies fully with the above requirements.

_____

Vendor's Signature, Title, Date

Notary Public Information

STATE OF _____

COUNTY OF _____

The foregoing instrument was acknowledged before me by means of ☐ physical presence or ☐ online notarization, this _____ day of _____, 20____, by _____, as _____ on behalf of the company/corporation. They ☐ are personally known to me or ☐ have produced _____ as identification.

_____

Notary Public Signature

(Affix Notary Stamp or Seal)

_____

Print, Type or Stamp Name of Notary

My commission expires:_____

PUBLIC ENTITY CRIMES

Any person submitting a bid, proposal or reply in response to this invitation or a contract, must execute the enclosed form PUR. 7069, sworn statement under section 287.133(3)(a), FLORIDA STATUTES, ON PUBLIC ENTITY CRIMES, including proper check(s), in the space(s) provided, and enclose it with his quote, bid, or proposal. If you are submitting a quote, bid or proposal on behalf of dealers or suppliers who will ship commodities and receive payment from the resulting contract, it is your responsibility to see that copy(ies) of the form are executed by them and are included with your quote, bid, or proposal. Corrections to the form will not be allowed after the quote, bid, or proposal opening time and date. Failure to complete this form in every detail and submit it with your quote, bid, or proposal may result in immediate disqualification of your bid or proposal.

The 1989 Florida Legislature passed Senate Bill 458 creating Sections 287.132 - 133, Florida Statutes, effective July 1, 1989. Section 287.132(3)(d), Florida Statutes, requires the Florida Department of General Services to maintain and make available to other political entities a "convicted vendor" list consisting of persons and affiliates who are disqualified from public contracting and purchasing process because they have been found guilty of a public entity crime. A public entity crime is described by Section 287.133, Florida Statutes, as a violation of any State or Federal law by a person with respect to and directly related to the transaction of business with any public entity in Florida or with an agency or political subdivision of any other state or with the United States, including, but not limited to, any bid or contract for goods or services to be provided to any public entity or with an agency or political subdivision and involving antitrust, fraud, theft, bribery, collusion, racketeering, conspiracy, or material misrepresentation.

A public entity may not accept any bid, proposal or reply from, award any contract to, or transact any business in excess of the threshold amount provided in Section 287.017, Florida Statutes, for CATEGORY TWO with any person or affiliate on the convicted vendor list for a period of 36 months following the date that person or affiliate was placed on the convicted vendor list unless that person or affiliate has been removed from the list pursuant to Section 287.133(3)(f), Florida Statutes.

Therefore, effective October 1, 1990, prior to entering into a contract (formal contract or purchase order in excess of the threshold amount provided in Section 287.017, Florida Statutes, for CATEGORY TWO) to provide goods or services to **THE CITY OF TITUSVILLE**, a person shall file a sworn statement with the contracting officer or Purchasing Director, as applicable. The attached statement or affidavit will be the form to be utilized and must be properly signed in the presence of a notary public or other officer authorized to administer oaths and properly executed.

THE INCLUSION OF THE SWORN STATEMENT OR AFFIDAVIT SHALL BE SUBMITTED CONCURRENTLY WITH YOUR BID, PROPOSAL OR REPLY DOCUMENTS. NON-INCLUSION OF THIS DOCUMENT MAY NECESSITATE REJECTION OF YOUR QUOTE, PROPOSAL OR BID.

SWORN STATEMENT UNDER SECTION 287.133(3)(a),
FLORIDA STATUTES, ON PUBLIC ENTITY CRIMES

THIS FORM MUST BE SIGNED IN THE PRESENCE OF A NOTARY PUBLIC OR OTHER OFFICER AUTHORIZED TO ADMINISTER OATHS.

1. This sworn statement is submitted with the _____. Contract for THE CITY OF TITUSVILLE.

2. This sworn statement is submitted by _____ whose business address is _____ and (if applicable) its Federal Employer Identification (FEIN) is _____.

3. My name is _____ (please print name of individual signing) and my relationship to the entity named above is _____.

4. I understand that a "public entity crime" as defined in Paragraph 287.133(1)(g), Florida Statutes, means a violation of any state or federal law by a person with respect to and directly related to the transaction of business with any public entity or with an agency or political subdivision of any other state or with the United States, including, but not limited to, any bid, proposal, reply or contract for goods or services, any lease for real property, or any contract for the construction or repair of a public building or public work, involving antitrust, fraud, theft, bribery, collusion, racketeering, conspiracy, or material misrepresentation.

5. I understand that "convicted" or "conviction" as defined in Paragraph 287.133(1)(b), Florida Statutes, means a finding of guilt or a conviction of a public entity crime, with or without an adjudication of guilt, in any federal or state trial court of record relating to charges brought by indictment or information after July 1, 1989, as a result of a jury verdict, nonjury trial, or entry of a plea of guilty or nolo contendere.

6. I understand that an "affiliate" as defined in Paragraph 287.133(1)(a), Florida Statutes, means:

(1) A predecessor or successor of a person convicted of a public entity crime; or

(2) An entity under the control of any natural person who is active in the management of the entity and who has been convicted of a public entity crime. The term "affiliate" includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in the management of an affiliate. The ownership by one person of shares constituting a controlling interest in another person, or a pooling of equipment or income among persons when not for fair market value under an arm's length agreement, shall be a prima facie case that one person controls another person. A person who knowingly enters into a joint venture with a person who has been convicted of a public entity crime in Florida during the preceding 36 months shall be considered an affiliate.

7. I understand that a "person" as defined in Paragraph 287.133(1)(e), Florida Statutes, means any natural person or entity organized under the laws of any state or of the United States with the legal power to enter into a binding contract and which bids or applies to bid on contracts let by a public entity, or which otherwise transacts or applies to transact business with a public entity. The term "person" includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in management of an entity.

8. Based on information and belief, the statement which I have marked below is true in relation to the entity submitting this sworn statement. (Please indicate which statement applies.)

_____ Neither the entity submitting this sworn statement, nor any officers, directors, executives, partners, shareholders, employees, members, or agents who are active in management of the entity, nor any affiliate of the entity have been charged with and convicted of a public entity crime subsequent to July 1, 1989.

_____ The entity submitting this sworn statement, or one or more of the officers, directors, executives, partners, shareholders, employees, members or agents who are active in management of the entity, or an affiliate of the entity has been charged with and convicted of a public entity crime subsequent to July 1, 1989, AND (Please indicate which additional statement applies.)

_____ There has been a proceeding concerning the conviction before a hearing officer of the State of Florida, Division of Administrative Hearings. The final order entered by the hearing officer did not place the person or affiliate on the convicted vendor list. (Please attach a copy of the final order.)

_____ The person or affiliate was placed on the convicted vendor list. There has been a subsequent proceeding before a hearing officer of the State of Florida, Division of Administrative Hearings. The final order entered by the hearing officer determined that it was in the public interest to remove the person or affiliate from the convicted vendor list. (Please attach a copy of the final order.)

_____ The person or affiliate has not been placed on the convicted vendor list. (Please describe any action taken by or pending with the Department of General Services.)

_____
(Signature)
Date:_____

Notary Public Information

STATE OF _____
COUNTY OF _____

Sworn to (or affirmed) and subscribed before me by means of ☐ physical presence or ☐ online notarization,

this_____ day of _____,_____ , by _____.
(day) (month) (year) (name of person acknowledging)

_____
Notary Public Signature

(Affix Notary Stamp or Seal)

_____
Print, Type or Stamp Name of Notary
My commission expires: _____

City of Titusville
E-Verify Affidavit

Obligation for State Funded Contracts:
Executive Order 11-116, which supersedes Executive Order 11-02, directs all agencies under the direction of the Governor to verify the employment eligibility of all new agency employees through the U.S. Department of Homeland Security's E-Verify system. Further, agencies are directed to include as a condition of all contracts for the provision of goods or services to the state in excess of nominal value, an express requirement that contractors utilize the U.S. Department of Homeland Security's E-Verify system to verify the employment eligibility of all new employees hired by the contractor during the contract term, and an express requirement that contractors include in such subcontracts the requirement that subcontractors performing work or providing services pursuant to the state contract utilize the E-Verify system to verify the employment eligibility of all new employees hired by the subcontractor during the contract term. In accordance with Executive Order 11-116, City of Titusville requires all vendors doing business with the City who are awarded state-funded contracts to verify employee eligibility using the E-Verify system. It is the responsibility of the awarded vendor to ensure compliance with E-Verify requirements (as applicable). To enroll in E-Verify, employers should visit the E-Verify website (http:// www.uscis.govle-verify) and follow the instructions. The employer must, as usual, retain the 1-9 Forms for inspection.

By affixing your signature below, you hereby affirm that you will comply with E-Verify requirements.

Federal Employer Identification Number (FEIN): _____

_____ _____ _____
Printed Name of Affiant | Printed Title of Affiant | Signature of Affiant

_____ _____
Name of Firm | Date

_____ _____ _____
Address of Firm | State | Zip Code

Notary Public Information

STATE OF _____
COUNTY OF _____

Sworn to (or affirmed) and subscribed before me by means of ☐ physical presence or ☐ online notarization,

this_____ day of _____,_____ , by _____.
(day) (month) (year) (name of person acknowledging)

_____
Notary Public Signature

(Affix Notary Stamp or Seal)

_____
Print, Type or Stamp Name of Notary

My commission expires: _____

HUMAN TRAFFICKING AFFIDAVIT

In compliance with Section 787.06(13), Florida Statutes, this affidavit must be completed by an officer or representative of a nongovernmental entity that is executing, renewing, or extending a contract with the City of _____ (the "Governmental Entity").

The undersigned, on behalf of the entity listed below (the "Nongovernmental Entity"), hereby attests under penalty of perjury as follows:

1. I am over the age of 18 and I have personal knowledge of the matters set forth herein.
2. I am an officer or representative of_____, a non-governmental entity and I am authorized to provide this affidavit on behalf of Nongovernmental Entity)
3. Nongovernmental Entity, and any of its subsidiaries or affiliates, do not use coercion for labor or services, as those terms are defined in Section 787.06, Florida Statutes, as may be amended from time to time.
4. If, at any time in the future, Nongovernmental Entity does use coercion for labor or services, Nongovernmental Entity will immediately notify Governmental Entity and no contracts may be executed, renewed, or extended between the parties.
5. I have read the foregoing affidavit and confirm that the facts stated in it are true, and are made for the benefit of, and reliance by Governmental Entity.

Company: _____
Authorized Signature: _____
Printed Name: _____
Title: _____

STATE OF _____
COUNTY OF _____
The foregoing instrument was acknowledged before me by means of ☐ physical presence or ☐ online notarization, this ____ day of _____, 20____, by _____, as _____ on behalf of the company/corporation. They ☐ are personally known to me or ☐ have produced _____ as identification.

_____
Notary Public Signature

(Affix Notary Stamp or Seal)

_____
Print, Type or Stamp Name of Notary
My commission expires:_____

FORM OF NON-COLLUSION AFFIDAVIT

(This Affidavit is Part of Bid)

STATE OF_____
COUNTY OF _____

I state that I _____ of _____,
(Name and Title) (Name of Firm) am authorized to make this affidavit on behalf of my firm and its owner, directors and officers. I am the person responsible in my firm for the price(s) and amount(s) of this Response, and the preparation of the Response. I state that:

1. The price(s) and amount(s) of this Response have been arrived at independently and without consultation, communication or agreement with any other Provider, potential provider, Proposal, or potential Proposal.

2. Neither the price(s) nor the amount(s) of this Response, and neither the approximate price(s) nor approximate amount(s) of this Response, have been disclosed to any other firm or person who is a Provider, potential Provider, Proposal, or potential Proposal, and they will not be disclosed before Proposal opening.

3. No attempt has been made or will be made to induce any firm or persons to refrain from submitting a Response for this contract, or to submit a price(s) higher that the prices in this Response, or to submit any intentionally high or noncompetitive price(s) or other form of complementary Response.

4. The Response of my firm is made in good faith and not pursuant to any agreement or discussion with, or inducement from, any firm or person to submit a complementary or other noncompetitive Response.
5. _____, its affiliates, subsidiaries, officers, director, and employees
(Name of Firm)
are not currently under investigation, by any governmental agency and have not in the last three years been convicted or found liable for any act prohibited by State or Federal law in any jurisdiction, involving conspiracy or collusion with respect to Proposal, on any public contract, except as follows:

I state that I and the named firm understand and acknowledge that the above representations are material and important, and will be relied on by the State of Florida for which this Response is submitted. I understand and my firm understands that any misstatement in this affidavit is, and shall be treated as, fraudulent concealment from the State of Florida of the true facts relating to the submission of responses for this contract.

Being duly sworn deposes and says that the information herein is true and sufficiently complete so as not to be misleading.

Notary Public Information

STATE OF _____
COUNTY OF _____

Sworn to (or affirmed) and subscribed before me by means of ☐ physical presence or ☐ online notarization,

this_____ day of _____,_____ , by _____.
(day) (month) (year) (name of person acknowledging)

_____
Notary Public Signature

(Affix Notary Stamp or Seal)

_____
Print, Type or Stamp Name of Notary

My commission expires: _____

CERTIFICATION OF PROPOSER REGARDING EQUAL EMPLOYMENT OPPORTUNITY

INSTRUCTIONS

This certification is required pursuant to Executive Order 11246 (30 F.R. 12319-25). The implementing rules and regulations provide that any bidder or prospective Consultant, or any of their proposed subconsultants, shall state as an initial part of the bid or negotiations of the contract whether it has participated in any previous contract or subcontract subject to the equal opportunity clause; and, if so, whether it has filed all compliance reports due under applicable instructions.

Where the certification indicates that the bidder has not filed a compliance report due under applicable instructions, such bidder shall be required to submit a compliance report within seven calendar days after bid opening. No contract shall be awarded unless such a report is submitted.

CERTIFICATION BY PROPOSER

NAME AND ADDRESS OF PROPOSER (Include ZIP Code)

_____

_____

4. Proposer has participated in a previous contract or subconsultant subject to the Equal Opportunity Clause.
_____ Yes _____No

5. Compliance reports were required to be completed in connection with such contract or subcontract.

_____Yes _____ No

6. Proposer has filled all compliance reports due under applicable instructions.

_____Yes _____ No

7. Have you ever been or are you being considered for sanction due to violation of Executive Order 11246, as amended? _____Yes _____No

_____

NAME AND TITLE OF SIGNER (Please type)

_____

SIGNATURE DATE

CERTIFICATION REGARDING DEBARMENT AND SUSPENSION

1. This contract is a covered transaction for purposes of 2 CFR Part 180 and 2 CFR Part 3000. As such, the contractor is required to verify that none of the contractor's principles (defined at 2 CFR § 180.995) or its affiliates (defined at 2 CFR § 180.905) are excluded (defined at 2 CFR § 180.940) or disqualified (defined at 2 CFR § 180.935).

2. The contractor must comply with 2 CFR Part 180, subpart C and 2 CFR Part 3000, subpart C and must include a requirement to comply with these regulations in any lower tier covered transaction it enters into.

3. This certification is a material representation of fact relied upon by the City of Titusville. If it is later determined that the contractor did not comply with 2 CFR Part 180, subpart C and 2 CFR Part 3000, subpart C, in addition to remedies available to the City of Titusville, the Federal Government may pursue available remedies, including but not limited to suspension and/or debarment.

4. The bidder or proposer agrees to comply with the requirements of 2 CFR Part 180, subpart C and 2 CFR Part 3000, subpart C while this offer is valid and throughout the period of any contract that may arise from this offer. The bidder or proposer further agrees to include a provision requiring such compliance in its lower tier covered transactions.

Authorized Signature	Address
Printed Name & Title	City, State, Zip Code
Company	Date

City of Titusville

"Gateway to Nature and Space"

REPORT

To: Members of the City Council

From: Thomas Abbate, City Manager

Subject: **Mayor's Report**

Department/Office: City Manager

Recommended Action:
The Mayor will provide his individual report.

Summary Explanation & Background:
N/A

Alternatives:
N/A

Item Budgeted:
N/A

Source/Use of Funds/Budget Book Page:
N/A

Strategic Plan:
N/A

Strategic Plan Impact:
N/A

ATTACHMENTS:
1. Sec._28_275.___Recreation_and_commercial_amusement__indoor_.

Sec. 28-275. Recreation and commercial amusement (indoor).

(a) *Districts where permitted.*

RE	RR	R-1A	R-1B	R-1C	R-2	R-3	RMH-1	RMH-2	RHP	
HM	T	NC	CC	RC	OP	M-1	M-2	M-3	PID	
			L	L		L			L	

GU	OR	P	DMU				UMU	SMU	RMU					UV	IRCN	
			D	U	M	C			100	200	300	400	500			
C											L	P		L		

(b) *Definition.* "Recreation and commercial amusement (indoor):" A recreational land use conducted entirely within a building, except where accessory outdoor uses are allowed by the Land Development Regulations, including arenas, art galleries, arts center, assembly hall, auditorium, bowling alley, club or lounge, community center, conference center, exhibit hall, movie theater, museum, performance theater, skating rink, swimming pool, gymnasiums, and tennis courts.

(c) *Standards for permitted uses with limitations.*

(1) In the Community Commercial (CC), Regional Commercial (RC), Regional Mixed Use (RMU) 300 and Urban Village (UV) zoning districts, recreation and commercial amusement (indoor) that do not meet any of the following criteria require a conditional use permit:

a. The proposed maximum capacity is 400 persons.

b. The hours of operation are between the hours of 6:00 a.m. to 10:00 p.m.

c. Meet the required parking without waivers, reduction or variances.

d. Include designated areas for spectators.

3. Six-foot wall along all common property lines with residential zoning.

(2) In the Light Industrial Services and Warehousing (M-1) and Planned Industrial Development (PID) zoning districts, recreation and commercial amusement (indoor):

a. Shall be limited to gymnasiums, personal training facilities and exercise facilities.

b. Shall not occur within any mini-warehouse (mini-storage) development.

c. Shall have a traffic circulation plan, considering drop-off and pick-up, approved by the Administrator based on safety considerations, prior to issuance of the required certificate of occupancy or business tax receipt.

(d) *Standards for Conditional Uses - these uses require public hearings.*

(1) In the General Use (GU) zoning district, Recreation and Commercial Amusement (indoor):

a. Shall be limited to assembly hall/auditorium uses on a minimum ten (10) acre lot.

b. Shall limit offices associated with the assembly hall/auditorium use to no more than ten (10) percent of the total floor area of the building.

c. Shall provide a "B" type buffer specified in Chapter 30, Development Standards, Article III, Improvements, Division 10, Landscaping, along all property lines abutting a residential zoning classification.

d. Shall not allow vehicular access from a local street unless the maximum occupant capacity of the facility is no more than four hundred (400) persons.

e. Shall provide on the conceptual site plan the proposed location of any outdoor activity or gathering areas. The use of amplified sound devices in these outdoor areas shall be considered as part of the Conditional Use Permit, and conditions may be applied by the Council to mitigate the impacts associated with these devices.

f. Additional conditions may be adopted by the City Council to mitigate the impacts of the proposed use.

(Ord. No. 23-2018, § 3, 7-10-18; Ord. No. 25-2020, § 48, 12-8-20; Ord. No. 1-2022, § 3, 1-25-21; Ord. No. 5-2024, § 3, 2-13-24)

Sec. 28-276. Recreation and commercial amusement (outdoor).

(a) *Districts where permitted.*

RE	RR	R-1A	R-1B		R-1C		R-2	R-3	RMH-1			RMH-2		RHP		
HM	T	NC	CC		RC		OP	M-1	M-2			M-3		PID		
	C		C		C											
GU	OR	P	DMU				UMU	SMU	RMU					UV	IRCN	
			D	U	M	C			100	200	300	400	500			
								C			C	C		C		

(b) *Definition.* "Recreation and commercial amusement (outdoor):" A recreational land use conducted outside of a building, characterized by potentially moderate impacts on traffic, the natural environment, and the surrounding neighborhood, including athletic fields, miniature golf, skateboard park, swimming, batch, wading and other therapeutic facilities, tennis handball, basketball courts, batting cages and trampoline facilities.

(c) *Standards.*

(1) Reserved.

(Ord. No. 25-2020, § 49, 12-8-20)

City of Titusville

"Gateway to Nature and Space"

REPORT

To: Members of the City Council

From: Thomas Abbate, City Manager

Subject: **Council Reports**

Department/Office: City Manager

Recommended Action:
Council Members will provide their individual reports.

Summary Explanation & Background:
N/A

Alternatives:
N/A

Item Budgeted:
N/A

Source/Use of Funds/Budget Book Page:
N/A

Strategic Plan:
N/A

Strategic Plan Impact:
N/A

ATTACHMENTS:
None

City of Titusville

"Gateway to Nature and Space"

REPORT

To: Members of the City Council

From: Thomas Abbate, City Manager

Subject: **City Manager's Report**

Department/Office: City Manager

Recommended Action:
The City Manager's Report is included in the agenda packet.

Summary Explanation & Background:
N/A

Alternatives:
N/A

Item Budgeted:
N/A

Source/Use of Funds/Budget Book Page:
N/A

Strategic Plan:
N/A

Strategic Plan Impact:
N/A

ATTACHMENTS:
1. City Manager Report of 10 March 2026
2. 022726 - CRA Bike Trail Flyer V8

MEMORANDUM

March 10, 2026

TO: The Honorable Mayor and City Council

FROM: Tom Abbate, City Manager

SUBJECT: City Manager's Report

The following is my report for Council's regular meeting of March 10, 2026:

A. ACTION ITEMS

None to Report

B. INFORMATION ITEMS

1. Community Visioning & Public Input Meeting

Attached is a flyer announcing a Community Visioning and Public Input Meeting on Thursday, March 19, 2026 at the First United Methodist Church in Downtown Titusville. Topics to be discussed include a Titusville Main Street Update, Trail Town Amenities and Broad Street Improvements.

Special Meetings and Events	
CRA Visioning and Public Input Meeting	First Methodist United Methodist Church March 19, 2026 5:30 pm
Student Awards Ceremony	Titusville Performing Arts Center April 27, 2026 6:00 pm
July 4th Parade	Route and Time TBD July 4, 2026
Red, White and Boom! July 4th Celebration	Sand Point Park July 4, 2026 6:00 pm – 10:00 pm

SHAPE THE FUTURE OF DOWNTOWN TITUSVILLE

Your Vision. Your Trails. Your Broad Street.

Community Vision & Public Input Meeting

- **Titusville Main Street Update**

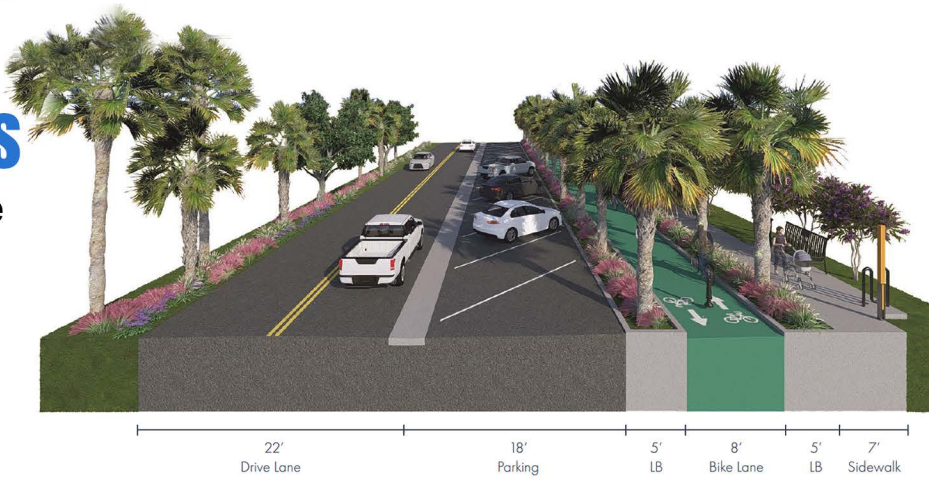
  Learn about the effort to reestablish Titusville Main Street.

- **Trail Town Amenities Strategic Plan**

  Let's build a trail experience that serves our community, attracts visitors, and supports our community.

- **Broad Street Improvements Vision**

  Broad Street is more than a road-it's our downtown spine. Share your ideas and priorities for the future design of Broad Street.



Why Your Input Matters

This is your opportunity to help shape a more walkable, vibrant, and economically thriving downtown Titusville.

Meeting Details

Date: Thursday, March 19, 2026
Time:5:30 PM
Location: First United Methodist Church, 206 S. Hopkins in Historic Downtown Titusville

Light refreshments will be provided.

For additional information, please contact: Sue Williams
City of Titusville Community Redevelopment Agency
Phone: 321-567-3860 Sue.williams@titusville.com