

CITY OF
TAMPA, FLORIDA

NOTICE TO BIDDERS, INSTRUCTIONS TO BIDDERS
PROPOSAL, BID BOND, FORM OF NOTICE OF AWARD,
AGREEMENT, PERFORMANCE BOND AND
SPECIFICATIONS

FOR

Contract 22-C-00046

Northwest Ground Storage Tank Improvements

City of Tampa
CONTRACT ADMINISTRATION DEPARTMENT
TAMPA MUNICIPAL OFFICE BUILDING
306 E. JACKSON STREET - 4TH FLOOR NORTH
TAMPA, FLORIDA 33602

JUNE 2023

CITY OF TAMPA
CONTRACT ADMINISTRATION DEPARTMENT
306 E. Jackson Street 280A4N
Tampa, FL 33602

BID NOTICE MEMO

Electronic Bids are not allowed for these projects.

Physical Bids will be received no later than 1:30 p.m. at the above address on the indicated Date(s) for the following Project(s):

CONTRACT NO.: 22-C-00046; Northwest Ground Storage Tank Improvements

BID OPENING: 1:30PM, Tuesday, July 18, 2023 **ESTIMATE:** \$1,405,800 **SCOPE:** Concrete crack repair, concrete wall spalling repair, repair of manholes, access hatch, and associated appurtenances, interior and exterior tank coating and surface preparation, repair of tank interior piping, tank disinfection, installation of fall protection system, general cleanup, start-up and testing.

Bids will be opened in the 4th Floor Conference Room, Tampa Municipal Office Building, 306 E. Jackson Street, Tampa, Florida 33602. The public is not allowed to attend in person. To view the Bid Opening follow these instructions:

To join the Microsoft Teams meeting from your computer, tablet, or smartphone.

[Click here to join the meeting](#) Meeting ID: 273 536 121 423 Passcode: EJGjYu

[Download Teams](#) | [Join on the web](#) **Or call in (audio only)** [+1 941-263-1615,,581517187#](#) United States, Sarasota Phone Conference ID: 581 517 187# [Find a local number](#) | [Reset PIN](#)

In accordance with the Americans with Disabilities Act (“ADA”) and Section 286.26, Florida Statutes, persons with disabilities needing a reasonable accommodation to participate in this public hearing or meeting should contact the City of Tampa’s ADA Coordinator at least 48 hours prior to the proceeding. The ADA Coordinator may be contacted by phone at 813-274-3964, email at TampaADA@tampagov.net, or by submitting an ADA - Accommodations Request online form available at <http://www.tampagov.net/ADARquest>.

Please note that the City of Tampa may not be able to accommodate any request received less than 48 hours before the scheduled public hearing or meeting.

Plans and Specifications and Addenda for this work may be examined at, and downloaded from, www.demandstar.com.

Files are also available at <http://www.tampagov.net/contract-administration/programs/construction-project-bidding>.

Email Questions to: contractadministration@tampagov.net.

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NOTICE TO BIDDERS
CITY OF TAMPA, FLORIDA
Contract 22-C-00046; Northwest Ground Storage Tank Improvements

Sealed Proposals will be received by the City of Tampa no later than 1:30 P.M., July 18, 2023, in the 4th Floor Conference Room, Tampa Municipal Office Building, 306 E. Jackson Street, Tampa, Florida, there to be publicly opened and read aloud.

The proposed work is to include, but not be limited to, concrete crack repair, concrete wall spalling repair, repair of manholes, access hatch, and associated appurtenances, interior and exterior tank coating and surface preparation, repair of tank interior piping, tank disinfection, installation of fall protection system, general cleanup, start-up and testing with all associated work required for a complete project in accordance with the Contract Documents.

The Instructions to Bidders, Proposal, Form of Bid Bond, Agreement, Form of Public Construction Bond, Specifications, Plans and other Contract Documents are posted at DemandStar.com. Backup files may be downloaded from <http://www.tampagov.net/contract-administration/programs/construction-project-bidding>. One set may be available for reference at the office of the Contract Administration Department, Municipal Office Building, Fourth Floor North, City Hall Plaza, Tampa, Florida 33602.

Each Proposal must be submitted on the Proposal form included in the Specifications and must be accompanied by a certified check or cashier's check on a solvent bank or trust company in compliance with Section 255.051, Florida Statutes, made payable to the City of Tampa, in an amount of not less than five per cent of the total bid, or a Bid Bond, of like amount, on the form set forth in the Contract Documents, as a guarantee that, if the Proposal is accepted, the Bidder will execute the Proposed Contract and furnish a Public Construction Bond within twenty (20) days after receipt of Notice of Award of Contract.

To be eligible to submit a proposal, a Bidder must hold the required and/or appropriate current license, certificate, or registration (e.g. DBPR license/certificate of authorization, etc.) in good standing at the time of receipt of Bids. **Per Section 489.131, Florida Statutes, Proposals submitted for the construction, improvement, remodeling, or repair of public projects must be accompanied by evidence that the Bidder holds the required and/or appropriate current certificate or registration, unless the work to be performed is exempt under Section 489.103, Florida Statutes.**

The City of Tampa reserves the right to reject any or all Bids and to waive any informalities in the Bid and/or Bid Bond. Acceptance or rejection of Proposals will be made as soon as practicable after the Proposals are received, but the City reserves the right to hold Proposals for ninety (90) days from the date of Opening.

Bid Protest Procedures: Unless subsequently indicated otherwise, in a revised posting on the Department's web page for Construction Project Bidding, the City of Tampa intends to award the referenced project to the lowest bidder listed in the tabulation posted on or about the date of Bid Opening. A bidder aggrieved by this decision may file a protest not later than 4:30 P.M., five (5) business days from the first posting thereof, pursuant to City of Tampa Code Chapter 2, Article V, Division 3, Section 2-282, Procurement Protest Procedures. Protests not conforming therewith shall not be reviewed.

Pursuant to Section 2-282, City of Tampa Code, during the solicitation period, including any protest and/or appeal, NO CONTACT with City officers or employees is permitted from any bidder or proposer, other than as specifically stated in this solicitation and as follows:
Director of the Contract Administration Department (CAD)
Contracts Management Supervisor, Jim Greiner
Contract Officer, Jody Gray
City legal department

Any Requests For Information must be submitted by email to ContractAdministration@tampagov.net

A person or affiliate who has been placed on the convicted vendor list following a conviction for a public entity crime may not submit a bid on a contract to provide any goods or services to a public entity, may not submit a bid on a contract with a public entity for the construction or repair of a public building or public work, may not submit bids 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 Section 287.017, for CATEGORY TWO for a period of 36 months from the date of being placed on the convicted vendor list." Refer to Section 287.133, Florida Statutes.

Pursuant to Section 287.087, Florida Statutes, under certain circumstances preference may be given to businesses with a drug-free workplace program that meets the requirements of said Section.

INSTRUCTIONS TO BIDDERS
SECTION 1 - SPECIAL INSTRUCTIONS

I-1.01 GENERAL:

The proposed work is the Northwest Ground Storage Tank Improvements in the City of Tampa, as required for a complete project, as shown on the plans and detailed in the specifications. The work is located on land owned or controlled by the City of Tampa.

To be eligible to submit a proposal, a Bidder must hold the required and/or appropriate current license, certificate, or registration (e.g. DBPR license/certificate of authorization, etc.) in good standing at the time of receipt of Bids. **Per Section 489.131, Florida Statutes, Proposals submitted for the construction, improvement, remodeling, or repair of public projects must be accompanied by evidence that the Bidder holds the required and/or appropriate current certificate or registration, unless the work to be performed is exempt under Section 489.103, Florida Statutes.**

I-1.02 FORM PREPARATION AND PRESENTATION OF PROPOSALS: Replace the second sentence with the following: Submission of the entire specification book is not required.

I-1.03 ADDENDA – Section I-2.03 is replaced with the following: No interpretation of the meaning of the Plans, Specifications, or other Contract Documents will be made to any Bidder orally.

Every request for such interpretation must be in writing, addressed to the City of Tampa, Contract Administration Department, 306 E. Jackson St., 4th Floor, Tampa, Florida 33602 and then emailed to ContractAdministration@tampagov.net. To be given consideration, such request must be received at least seven (7) days prior to the date fixed for the opening of the Proposals. Any and all such interpretations and any supplemental instructions will be in the form of written addenda which, if issued, will be posted on DemandStar.Com and on the Department's web page. Failure of any Bidder to receive any such addenda shall not relieve said Bidder from any obligation under his Proposal as submitted. All addenda so issued shall become part of the Contract Documents.

I-1.04 INSTRUCTIONS TO BIDDERS

SECTION 2 – GENERAL INSTRUCTIONS. Section I-2.07 SIGNATURE AND QUALIFICATIONS OF BIDDERS is replaced with the following:

Proposals must be signed in ink by the Bidder with signature in full. When firm is a Bidder, the Proposal shall be signed in the name of the firm by one or more partners. When a corporation is a bidder the officer signing shall set out the corporate name in full beneath which he shall sign his name and give the title of his office.

If the bidder referred to in Section I-2.07 is a corporation, it must submit; upon request, a copy of its filed Articles of Incorporation. In addition, if the bidder was incorporated in another state, it must establish that it is authorized to do business in the State of Florida. If the bidder is using a fictitious name, it must submit upon request, proof of registration of such name with the Clerk of the Circuit Court of the County where its principal place of business is. Failure to submit what is required is grounds to reject the bid of that bidder.

SECTION 2 – GENERAL INSTRUCTIONS. Section I-2.14 NONDISCRIMINATION IN EMPLOYMENT is changed to add the following to the end of the existing text:

The following provisions are hereby incorporated into any contract executed by or on behalf of the City. Contractor shall comply with the following Statement of Assurance: During the performance of the Contract, the Contractor assures the City, that the Contractor is in compliance with Title VII of the 1964 Civil Rights Act, as amended, the Florida Civil Rights Act of 1992, and the City of Tampa Code of Ordinances, Chapter 12, in that Firm/Contractor does not on the grounds of race, color, national origin, religion, sex, sexual orientation, gender identity or expression, age, disability, familial status, or marital status, discriminate in any form or manner against said Firm's/Contractor's employees or applicants for employment. Contractor understands and agrees that the Contract is conditioned upon the veracity of this Statement of Assurance, and that violation of this condition shall be considered a material breach of the Award/Contract. Furthermore, Contractor herein assures the City that said Contractor will comply with Title VI of the Civil Rights Act of 1964 when federal grant(s) is/are

INSTRUCTIONS TO BIDDERS
SECTION 1 - SPECIAL INSTRUCTIONS

involved. This Statement of Assurance shall be interpreted to include Vietnam-Era Veterans and Disabled Veterans within its protective range of applicability. Firm/Contractor further acknowledges and agrees to provide the City with all information and documentation that may be requested by the City from time to time regarding the solicitation, selection, treatment and payment of subcontractors, suppliers and vendors in connection with this Award/Contract. Firm/Contractor further acknowledges that it must comply with City of Tampa Code of Ordinances, Chapter 26.5.

I-1.05 TIME FOR COMPLETION:

The work shall be arranged to be completed in accordance with a progress schedule approved by the Construction Engineer.

The time for completion of this project, referred in Article 4.01 of the Agreement, shall be 120 consecutive calendar days. The period for performance shall start from the date indicated in the Notice To Proceed.

I-1.06 LIQUIDATED DAMAGES:

The amount of liquidated damages, referred to in Article 4.06 of the Agreement, for completion of this project shall be \$500 per calendar day.

I-1.07 BASIS OF AWARD OF CONTRACT:

The basis of award referred to in Item I-2.11 of Instructions to Bidders shall be the greatest amount of work, which can be accomplished within the funds available as budgeted. The award may be made on the basis of the total bid, base bid, alternates(s) if any, unit bids if any, or any combination thereof deemed to be in the best interest of the City.

Unless all bids are rejected, the award will be made within 90 days after opening proposals.

I-1.08 GROUND BREAKING CEREMONY:

Arrangement may be made by the City in coordination with the Contractor, for construction to commence with a Ground Breaking Ceremony. Details will be discussed at the pre-construction conference.

I-1.09 INSURANCE:

The insurance required for this project shall be as indicated on the attached and incorporated Special Instructions pages beginning with page INS-1 entitled CITY OF TAMPA INSURANCE REQUIREMENTS, which among other things requires the Contractor to provide a Certificate of Insurance to the City prior to commencing work. The City may from time to time use a third party vendor to manage its insurance certificates and related documentation which vendor may periodically initiate contact, requests for information, etc. on the City's behalf.

I-1.10 TESTING:

The Contractor shall perform all Quality Control (QC) testing to meet the FDOT requirements in the Florida Department of Transportation, JULY 2022 Standard Specifications for Road and Bridge Construction

INSTRUCTIONS TO BIDDERS
SECTION 1 – SPECIAL INSTRUCTIONS

I-1.11 EQUAL BUSINESS OPPORTUNITY PROGRAM (EBO) REQUIREMENTS / PROJECT SUBCONTRACTING GOAL(S)

BIDDERS MUST SUBMIT COMPLETED AND SIGNED CITY OF TAMPA FORMS MBD-10 AND MBD-20 WITH THEIR BIDS. BIDS SUBMITTED WITHOUT THESE COMPLETED FORMS (INCLUDING SIGNATURES) WILL BE DEEMED NON-RESPONSIVE. INSTRUCTIONS ON COMPLETING THE FORMS ARE INCLUDED AFTER EACH FORM IN THIS BID PACKAGE.

THE CHECKED BOX INDICATES SECTION THAT APPLIES TO THIS BID.



SUBCONTRACTING GOAL – (WMBE and SLBE)

In accordance with the City of Tampa's EBO Program, Chapter 26.5, City of Tampa Code, the subcontracting goal(s) has/have been established for subcontracting with City-certified underutilized WMBEs (Women and Minority Business Enterprises) and/or SLBEs (Small Local Business Enterprises) on this project (hereinafter "Goal"). *The Goal is based, in part, upon the availability of City-certified firms to perform the anticipated scope of work (Bid is subject to the subcontracting project goal(s) section for which a corresponding numerical percent is indicated).* Project Industry Category: Construction

- Project Goal(s): _____% **U-WMBE (Underutilized Woman and Minority Business Enterprise) (EBO Program)**
per MBD Form-70 the U-WMBE subcontract Classification for Construction is African American (BBE)
- _____% **SLBE (Small Local Business Enterprise) (EBO Program)** only City-certified SLBEs
- _____ **2% U-WMBE/SLBE Combined (EBO Program)**
per MBD Form-70 the U-WMBE subcontract Classification for Construction is African American (BBE)
together with City-certified SLBEs
- _____% **WMBE/SLBE ASPIRATIONAL (EBO Program)** An all-inclusive SLBE/WMBE goal; any City certified firm counts towards goal attainment.

BIDDERS **MUST SOLICIT ALL COMPANIES ON THE ATTACHED AVAILABILITY CONTACT LIST** at least **five (5) City business days or more prior to bid opening as a first step** to demonstrate Good Faith Efforts to achieve the Goal. Substantive documentation that demonstrates Good Faith Efforts to achieve the Goal **must be submitted with the bid**, including emails, faxes, phone calls, letters, and other communication with City-certified firms. Bidders may explore other potential opportunities for subcontracting by consulting the current directory of all certified firms posted by the City of Tampa at <https://tampa.diversitysoftware.com> as the **Availability Contact List may not be inclusive of all firms that could count toward Goal attainment. However, ONLY SUBCONTRACTING** with those specific WMBEs designated as "underutilized" by Classification in the appropriate industry category (and, if made applicable by being specifically included in the above Goal, SLBEs) will count toward meeting the Goal. Making Good Faith Efforts through these and other means (not pro-forma) is the responsibility of the Bidder. See the attached Good Faith Effort Compliance Plan (GFECP) (MBD Form-50) for specific requirements.

GOOD FAITH EFFORT COMPLIANCE PLAN (GFECP) REQUIRED (MBD FORM-50). When a Goal has been established, the Bidder **must submit** with its bid a Good Faith Effort Compliance Plan (GFECP) using the attached MBD Form-50 together with supporting documentation as specified therein. **Submittals that do not contain MBD Form-50 when a Goal has been established will be deemed non-responsive.** Additional explanation and documentation is required whenever a City-certified subcontractor's quote is not utilized. Any additional information regarding GFECP (post-bid) shall be only upon the City's request for clarification of information submitted with bid and **not to "cure" omissions or deficiencies** of the bid.

NOTE: When U-WMBEs are included in a Goal, only those City-certified subcontractors whose WMBE Classification is designated "underutilized" will count toward Goal attainment. Refer to **MBD Form-70** to identify underutilized WMBEs by subcontract Classification for the applicable project industry category. A prime bidder who is a City-certified WMBE and/or SLBE is not exempt from the **GFECP MBD Form-50** requirements.



SUBCONTRACTING GOAL – (DBE) FDOT DISADVANTAGED BUSINESS ENTERPRISE PROGRAM

The City of Tampa is required to use the Florida Department of Transportation (FDOT) Disadvantaged Business Enterprise (DBE) program on contracts with Federal Highway Administration (FHWA) funds. Effective October 1, 2017 through to September 30, 2020, the overall FDOT DBE aspirational goal is **10.65%** and is *race neutral*, meaning that FDOT believes the aspirational DBE goal may be achieved entirely through ordinary, competitive procurement methods. Despite the absence of a contract specific DBE goal on this project, the City encourages bidders to seek out and use DBEs and other minority, small businesses. For assistance in identifying certified DBEs, FDOT offers the use of its supportive services program accessed via FDOT's Equal Opportunity Office at <http://www.fdot.gov/equalopportunity/serviceproviders.shtm>. FDOT DBE rules and regulations apply to this solicitation, including the requirement to report bidder opportunity information in the FDOT Equal Opportunity Compliance (EOC) web-based application within three (3) business days of submission of the bid for ALL subcontractors who quoted bidder for this specific project. The five (5) char/digit LAP Agreement Contract Number for this project is G_____. The web address to the EOC system is: <https://fdotwp1.dot.state.fl.us/EqualOpportunityCompliance/Account.aspx/LogIn?ReturnUrl=%2fEqualOpportunityCompliance>

NOTE: Regardless of FDOT DBE program applicability, for data collection purposes bidder still **must submit** City Forms MBD-10 and MBD-20 completed and signed with its bid or the bid will be deemed non-responsive.

DIVERSITY MANAGEMENT INITIATIVE (DMI) DATA REPORTING FORMS REQUIRED FOR ALL CONTRACTS

Bidder **must submit**, with its bid, completed and signed Forms MBD-10 and MBD-20 to be considered a responsive bid. Specifically, the 'Schedule of All Solicited Sub-(Contractors/Consultants/Suppliers) (Form MBD-10)' listing all subcontractors (including non-certified) solicited and 'Schedule of All -To Be Utilized Sub-(Contractors/Consultants/Suppliers) (Form MBD-20)' listing all subcontractors (including non-certified) to be utilized. Supplemental forms, such as 'Form MBD-40 Official Letter Of Intent' (LOI), can be submitted with the bid or once declared lowest-responsive bidder. After an award, 'DMI Sub-(Contractors/Consultants/Suppliers) Payment Form (Form MBD-30)' is to be submitted with payment requests to report payments to subcontractors and using the on-line automated MBD compliance software system available at <https://tampa.diversitysoftware.com>

For additional information about the WMBE and SLBE programs contact the Minority and Small Business Development Office at 813-274-5522. (3-18)

INSTRUCTIONS TO BIDDERS
SECTION 1 - SPECIAL INSTRUCTIONS

I-1.12 BID SECURITY:

Surety companies shall have a rating of not less than B+ Class VI as evaluated in the most recently circulated Best KeyRating Guide Property/Casualty.

I-1.13 PUBLIC CONSTRUCTION BOND:

The Bidder who is awarded the Contract will be required to furnish a Public Construction Bond upon the form provided herein, equal to 100 percent of the Contract price, such Bond to be issued and executed by (a) surety company(ies) acceptable to the City and licensed to underwrite contracts in the State of Florida. After execution of the Agreement and before commencing work, the Contractor must provide the City a certified copy of the officially recorded Bond.

I-1.14 AGREEMENT

SECTION 2 – POWERS OF THE CITY’S REPRESENTATIVES, new Article 2.05:

Add the following:

Article 2.05 CITY’S TERMINATION FOR CONVENIENCE:

The City may, at any time, terminate the Contract in whole or in part for the City’s convenience and without cause. Termination by the City under this Article shall be by a notice of termination delivered to the Contractor, specify the extent of termination and the effective date.

Upon receipt of a notice of termination, the Contractor shall immediately, in accordance with instructions from the City, proceed with performance of the following duties regardless of delay in determining or adjusting amounts due under this Paragraph:

- (a) cease operations as specified in the notice;
- (b) place no further orders and enter into no further subcontracts for materials, labor, services or facilities except as necessary to complete continued portions of the Contract;
- (c) terminate all subcontracts and orders to the extent they relate to the Work terminated;
- (d) proceed to complete the performance of Work not terminated; and
- (e) take actions that may be necessary, or that the City may direct, for the protection and preservation of the terminated Work.

The amount to be paid to the Contractor by the City because of the termination shall consist of:

- (a) for costs related to work performed on the terminated portion of the Work prior to the effective date including termination costs relative to subcontracts that are properly chargeable to the terminated portion of the Work;
- (b) the reasonable costs of settlement of the Work terminated, including accounting, legal, clerical and other expenses reasonable necessary for the preparation of termination settlement proposals and supporting data; additional costs of termination and settlement of subcontracts excluding amounts of such settlements; and storage, transportation, and other costs incurred which are reasonably necessary for the preservation, protection or disposition of the terminated Work; and
- (c) a fair and reasonable profit on the completed Work unless the Contractor would have sustained a loss on the entire Contract had it been completed.

Allowance shall be made for payments previously made to the Contractor for the terminated portion of the Work, and claims which the City has against the Contractor under the Contract, and for the value of materials supplies, equipment or other items that are part of the costs of the Work to be disposed of by the Contractor.

SECTION 5 – SUBCONTRACTS AND ASSIGNMENTS, Article 5.01, Page A-7, last paragraph:

Change “...twenty-five (25) percent...” to “...fifty-one (51) percent...”

SECTION 8 – CONTRACTOR’S EMPLOYEES, Article 8.03, Page A-9, delete Article 8.03 in its entirety and

Replace with the following new article:

ARTICLE 8.03 EMPLOYMENT OPPORTUNITIES

The Contractor shall, in the performance of the work required to be done under this Contract, employ all workers without discrimination and must not maintain, provide or permit facilities that are segregated.

INSTRUCTIONS TO BIDDERS
SECTION 1 - SPECIAL INSTRUCTIONS

SECTION 10 – PAYMENTS, Article 10.05, Page A-10, 1st Paragraph, 1st Sentence:
Change "...fair value of the work done, and may apply for..." to "...fair value of the work done, and shall apply for..."

SECTION 10 – PAYMENTS, Article 10.05, Page A-10, 1st Paragraph, 1st Sentence:
Change "...fair value of the work done, and may apply for..." to "...fair value of the work done, and shall apply for..." Note: Retainage as referenced in Article 10.05 is limited to a maximum of five percent (5%).

SECTION 11 – MISCELLANEOUS PROVISIONS, Article 11.02, Page A-12, 1st Paragraph, 2nd Sentence:
Delete the 2nd Sentence in its entirety and replace it with the following new 2nd Sentence:

Without limiting application of Article 11.07, below, whenever the Contractor is required or desires to use any design, device, material, or process covered by letters of patent or copyright, the Contractor shall indemnify, defend, and hold harmless the City Indemnified Parties (as defined below) from any and all Claims (as defined below) for infringement by reason of the use of any such patented design, device, tool, material, equipment, or process, to be performed under the Contract and damages which may be incurred by reason of such infringement at any time during the prosecution or after completion of the work.

SECTION 11 – MISCELLANEOUS PROVISIONS, Article 11.03, Page A-12:
Delete Article 11.03 in its entirety and replace with the following new article:
ARTICLE 11.03 INTENTIONALLY OMITTED.

SECTION 11 – MISCELLANEOUS PROVISIONS, Article 11.07, Page A-12:
Delete Article 11.07 in its entirety and replace with the following new article:
ARTICLE 11.07 INDEMNIFICATION PROVISIONS

Whenever there appears in this Agreement, or in the other Contract Documents made a part hereof, an indemnification provision within the purview of Chapter 725.06, Laws of Florida, the monetary limitation on the extent of the indemnification under each such provision shall be One Million Dollars or a sum equal to the total Contract price, whichever shall be the greater.

Contractor releases and agrees to defend, indemnify and hold harmless the City, its officers, elected and appointed officials, employees, and/or agents (collectively, "City Indemnified Parties") from and against any and all losses, liabilities, damages, penalties, settlements, judgments, charges, or costs (including without limitation attorneys' fees, professional fees, or other expenses) of every kind and character arising out of any and all claims, liens, is entitled to indemnification hereunder. This obligation shall in no way be limited in any nature whatsoever by any limitation on the amount or type of Contractor's insurance coverage.

The parties agree that to the extent the written terms of this indemnification are deemed by a court of competent jurisdiction to be in conflict with any provisions of Florida law, in particular Sections 725.06 and 725.08, Florida Statutes, the written terms of this indemnification shall be deemed by any court of competent jurisdiction to be modified in such a manner as to be in fully and complete compliance with all such laws and to contain such limiting conditions or limitations of liability, or to not contain any unenforceable or prohibited term or terms, such that this indemnification shall be enforceable in accordance with and to the maximum extent permitted by Florida law.

The obligation of Contractor under this Article is absolute and unconditional; it is not conditioned in any way on any attempt by a City Indemnified Party to collect from an insurer any amount under a liability insurance policy, and is not subject to any set-off, defense, deduction, or counterclaim that the Contractor might have against the City Indemnified Party. The duty to defend hereunder is independent and separate from the duty to indemnify, and the duty to defend exists regardless of any ultimate liability of Contractor, the City, and any City Indemnified Party. The duty to defend arises immediately upon presentation of a Claim by any party and written notice of such Claim being provided to Contractor. Contractor's defense and indemnity obligations hereunder will survive the expiration or earlier termination of this Contract.

INSTRUCTIONS TO BIDDERS
SECTION 1 - SPECIAL INSTRUCTIONS

Contractor agrees and recognizes that the City Indemnified Parties shall not be held liable or responsible for any Claims which may result from any actions or omissions of Contractor in which the City Indemnified Parties participated either through providing data or advice and/or review or concurrence of Contractor's actions. In reviewing, approving or rejecting any submissions by Contractor or other acts of Contractor, the City in no way assumes or shares any responsibility or liability of Contractor or any tier of subcontractor/subconsultant/supplier, under this Contract.

In the event the law is construed to require a specific consideration for such indemnification, the parties agree that the sum of Ten Dollars and 00/100 (\$10.00), receipt of which is hereby acknowledged, is the specific consideration for such indemnification and the providing of such indemnification is deemed to be part of the specifications with respect to the services provided by Contractor.

SECTION 11 – MISCELLANEOUS PROVISIONS, Article 11.12, Page A-13:
Change Article 11.12 to add the following new language after existing text:

The City of Tampa is a public agency subject to Chapter 119, Florida Statutes. In accordance with Florida Statutes, 119.0701, Contractor agrees to comply with Florida's Public Records Law, including the following:

1. Contractor shall keep and maintain public records required by the City to perform the services under this Agreement;
2. Upon request by the City, provide the City with copies of the requested records, having redacted records in total on in part that are exempt from disclosure by law or allow the records to be inspected or copied within a reasonable time (with provision of a copy of such records to the City) on the same terms and conditions that the City would provide the records and at a cost that does not exceed that provided in Chapter 119, Florida Statutes, or as otherwise provided by law;
3. Ensure that records, in part or in total, that are exempt or that are confidential and exempt from disclosure requirements are not disclosed except as authorized by law for the duration of the Agreement term and following completion (or earlier termination) of the Agreement if Contractor does not transfer the records to the City;
4. Upon completion (or earlier termination) of the Agreement, Contractor shall within 30 days after such event either transfer to the City, at no cost, all public records in possession of the Contractor or keep and maintain the public records in compliance with Chapter 119, Florida Statutes. If Contractor transfers all public records to the City upon completion (or earlier termination) of the Agreement, Contractor shall destroy any duplicate records that are exempt or confidential and exempt from public records disclosure requirements. If Contractor keeps and maintains public records upon completion (or earlier termination) of the Agreement, Contractor shall meet all applicable requirements for retaining public records. All records stored electronically must be provided to the City in a format that is compatible with the information technology systems of the agency.

The failure of Contractor to comply with Chapter 119, Florida Statutes, and/or the provisions set forth in this Article shall be grounds for immediate unilateral termination of the Agreement by the City; the City shall also have the option to withhold compensation due Contractor until records are received as provided herein.

IF CONTRACTOR HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO CONTRACTOR'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS AGREEMENT, CONTACT THE CUSTODIAN OF PUBLIC RECORDS AT 813-274-8598, JIM.GREINER@TAMPAGOV.NET, AND CONTRACT ADMINISTRATION DEPARTMENT, TAMPA MUNICIPAL OFFICE BUILDING, 4TH FLOOR, 306 E. JACKSON ST. TAMPA, FLORIDA 33602.

INSTRUCTIONS TO BIDDERS
SECTION 1 - SPECIAL INSTRUCTIONS

I-1.15 Contractors must utilize the U.S. Department of Homeland Security's E-Verify Systems to verify the employment eligibility of all persons employed during the term of the Contract to perform employment duties within the State of Florida and all persons, including subcontractors, assigned by Contractor to perform work pursuant to the contract.

E-Verify. In accordance with Section 448.095, Florida Statutes, the Contractor agrees to register with and utilize the U.S. Department of Homeland Security's E-Verify system to verify the employment eligibility of all new employees hired during the term of the Contract for the services specified in the Contract. The Contractor must also include a requirement in subcontracts that the subcontractor must register with and utilize the E-Verify system to verify the employment eligibility of all new employees hired by the subcontractor during the Contract term. If the Contractor enters into a contract with a subcontractor, the subcontractor must provide the Contractor with an affidavit stating that the subcontractor does not employ, contract with, or subcontract with an unauthorized alien. The Contractor shall maintain a copy of such affidavit for the duration of the Contract. If the City has a good faith belief that the Contractor has knowingly violated Section 448.09(1), Florida Statutes, the City shall terminate the Contract with the Contractor, and the Contractor may not be awarded a contract with the City for at least 1 year after the date on which the Contract was terminated. The Contractor is liable for any additional costs incurred by the City as a result of the termination of the Contract. If the City has a good faith belief that a subcontractor knowingly violated the law, but the Contractor has otherwise complied with the law, the City shall promptly notify the Contractor and order the Contractor to immediately terminate the contract with the subcontractor.

I-1.16 GENERAL PROVISIONS; G-2.02 Copies Furnished to Contractor: Replace the first paragraph with the following:

The Contractor shall acquire for its use copies of the plans and specifications as needed, which may be downloaded from the City's web site, at <http://www.tampagov.net/contract-administration/programs/construction-project-bidding>.

Bidder as part of the solicitation process (and as Contractor if Bidder is successful) may hold, come into possession of, and/or generate certain building plans, blueprints, schematic drawings, including draft, preliminary, and final formats, which depict the internal layout and structural elements of a building, facility, or other structure owned or operated by the City or an agency (singularly or collectively "Exempt Plans"), which pursuant to Section 119.071(3), Florida Statutes, are exempt from Section 119.07(1), Florida Statutes and Section 24(a), Art. I of the Florida State Constitution. Contractor certifies it has read and is familiar the exemptions and obligations of Section 119.071(3), Florida Statutes; further that Contractor is and shall remain in compliance with same, including without limitation maintaining the exempt status of such Exempt Plans, for so long as any Exempt Plans are held by or otherwise in its possession.

I-1.17 PAYMENT DISPUTE RESOLUTION

Any dispute pertaining to pay requests must be presented to the City pursuant to Executive Order 2003-1.

I-1.18 SCRUTINIZED COMPANIES CERTIFICATION

Section 287.135, Florida Statutes, prohibits agencies or local governmental entities from contracting for goods or services of any amount with companies that are on the Scrutinized Companies that Boycott Israel List or are engaged in a boycott of Israel, and of \$1 million or more with companies that are on either the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, or are engaged in business operations in Cuba or Syria. Specifically, Section 287.135(2), Florida Statutes, states: "A company is ineligible to, and may not, bid on, submit a proposal for, or enter into or renew a contract with an agency or local governmental entity for goods or services of: (a) Any amount if, at the time of bidding on, submitting a proposal for, or entering into or renewing such contract, the company is on the Scrutinized Companies that Boycott Israel List, created pursuant to s. 215.4725, or is engaged in a boycott of Israel; or (b) One million dollars or more if, at the time of bidding on, submitting a proposal for, or entering into or renewing such

INSTRUCTIONS TO BIDDERS
SECTION 1 - SPECIAL INSTRUCTIONS

contract, the company: 1. Is 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; or 2. Is engaged in business operations in Cuba or Syria.”

Upon submitting its bid or proposal, a bidder/proposer: (i) certifies the company is not in violation of Section 287.135, Florida Statutes, and shall not be in violation at the time the company enters into or renews any resulting contract; and (ii) agrees any such resulting contract shall be deemed to contain a provision that allows the City, at its option, to terminate such contract for cause if the company is found to have submitted a false certification, been placed on one or any of the foregoing Lists, been engaged in a boycott of Israel, or been engaged in business operations in Cuba or Syria.

I-1.19 FLORIDA'S PUBLIC RECORDS LAW; DATA COLLECTION

Pursuant to Section 119.071(5)(a)2a, Florida Statutes, social security numbers shall only be collected from Bidders and/or Contractor by the City should such number be needed for identification, verification, and/or tax reporting purposes. To the extent Bidder and/or Contractor collects an individual's social security number in the course of acting on behalf of the City pursuant to the terms and conditions of its Proposal or, if awarded, the Agreement, Bidder and/or Contractor shall follow the requirements of Florida's Public Records Law.

I-1.20 APPRENTICESHIP REQUIREMENTS AND REPORTING FORM

Bidders shall comply with the conditions of the Apprenticeship Requirements and Reporting Form, Ordinance No. 2021-33, incorporated into the Contract and as specified therein.

I-1.21 BIDDER'S CRIMINAL HISTORY SCREENING PRACTICES

Per City of Tampa Code of Ordinances, Section 2-284, Bidder is requested to provide information as to whether Bidder has criminal history screenings similar in nature to the practices contained in Chapter 12, Article VI, City of Tampa Code of Ordinances. If the Bidder voluntarily agrees to comply with the City's criminal screening practices as provided in Chapter 12, Article IV of the City Code, the Bidder will receive a two percent (2%) discount for evaluation purposes only if Bidder submits notarized documentation with its bid, and an assurance of compliance with Section 2-284 if awarded the contract (“Ban the Box Requirements”). The City of Tampa's municipal codes are published online by the Municipal Code Corporation at the website link below.

https://www.municode.com/library/fl/tampa/codes/code_of_ordinances

INSTRUCTIONS TO BIDDERS

SECTION 2 GENERAL INSTRUCTIONS

I-2.01 BIDDER'S RESPONSIBILITY

Before submitting Proposals, Bidders shall carefully examine the entire site of the proposed work and adjacent premises and the various means of approach and access to the site, and make all necessary investigations to inform themselves thoroughly as to the facilities necessary for delivering, placing and operating the necessary construction equipment, and for delivering and handling materials at the site, and inform themselves thoroughly as to all difficulties involved in the completion of all the work in accordance with the Contract Documents.

Bidders must examine the Plans, Specifications, and other Contract Documents and shall exercise their own judgment as to the nature and amount of the whole of the work to be done, and for the bid prices must assume all risk of variance, by whomsoever made, in any computation or statement of amounts or quantities necessary to complete the work in strict compliance with the Contract Documents.

Elevations of the ground are shown on the Plans and are believed to be reasonably correct, but are not guaranteed to be absolutely so and are presented only as an approximation. Bidders shall satisfy themselves as to the correctness of all elevations.

The City may have acquired, for its own use, certain information relating to the character of materials, earth formations, probable profiles of the ground, conditions below ground, and water surfaces to be encountered at the site of the proposed work. This information, if it exists, is on file at the offices of the Department of Public Works and Bidders will be permitted to see and examine this information for whatever value they consider it worth. However, this information is not guaranteed, and Bidders should satisfy themselves by making borings or test pits, or by such other methods as they may prefer, as to the character, location, and amounts of water, peat, clay, sand, quicksand, gravel, boulders, conglomerate, rock, gas or other material to be encountered or work to be performed.

Various underground and overhead structures and utilities are shown on the plans. The location and dimensions of such structures and utilities, where given, are believed to be reasonably correct, but do not purport to be absolutely so. These structures and utilities are plotted on the Plans for the information of the Bidders, but information so given is not to be construed as a representation or assurance that such structures will be found or encountered as plotted, or that such information is complete or accurate.

I-2.02 FORM, PREPARATION AND PRESENTATION OF PROPOSALS

Each Proposal shall be submitted upon the Proposal Form and in accordance with the instructions included herein. The Proposal Form must not be detached herefrom. All blank spaces for bid prices must be filled in, in both words and figures, with the unit or lump sum prices, or both, for which the Proposal is made. The computed total price for each unit price Contract Item shall be determined by multiplying the estimated quantity of the item, as set forth in the Proposal Form, by the corresponding unit price bid for such item. The resulting product shall be entered in the appropriate blank space under the column headed "Computed Total Price for Item". The lump sum price bid for each lump sum price Contract Item shall also be entered in the column headed "Computed Total Price for Item". If a Proposal contains any omissions, erasures, alterations, additions, or items not called for in the itemized Proposal, or contains irregularities of any kind, such may constitute sufficient cause for rejection of the Proposal. In case of any discrepancy in the unit price or amount bid for any item in the Proposal, the price as expressed in written words will govern. In no case is the Agreement Form to be filled out or signed by the Bidder.

In the case of certain jobs bid Lump Sum a "Schedule of Unit Prices" must be filled out as an attachment to the Lump Sum proposal. These prices may be used as a guide for the negotiation of change orders, at the City's option.

The proposal must be signed and certified and be presented on the prescribed form in a sealed envelope on/or before the time and at the place stated in the Notice of Bidders, endorsed with the name of the person, firm or corporation presenting it, the date of presentation, and the title of the work for which the Proposal is made.

Unless the apparent low bidder is now engaged in or has recently completed contract work for the City of Tampa, he, if requested, shall furnish to the City, after the opening of bids and prior to award, a summary statement of record of construction experience over the past three (3) years with proper supporting evidence, and, if required by the City, shall also furnish a list of equipment and other facilities pertinent to and available for the proper execution of the proposed work, and a statement of financial resources to the extent necessary to establish ability to carry on the proposed work. The City may make further investigations as considered necessary with respect to responsibility of the Bidder to whom it appears may be awarded the Contract.

If forwarded by mail, the sealed envelope containing the Proposal, endorsed as directed above, must be enclosed in another envelope addressed as specified in the Notice to Bidders and sent by registered mail.

I-2.03 ADDENDA AND INTERPRETATIONS

No interpretation of the meaning of the Plans, Specifications, or other Contract Documents will be made to any Bidder orally.

Every request for such interpretation must be in writing, addressed to the Contract Administration Department, Tampa Municipal Office Building, 4th Floor North, City Hall Plaza, Tampa, Florida 33602. To be given consideration, such request must be received at least seven (7) days prior to the date fixed for the opening of the Proposals. Any and all such interpretations and any supplemental instructions will be in the form of written addenda which, if issued, will be sent by certified mail, with return receipt requested, to all prospective bidders at the respective addresses furnished, for such purposes, not later than three (3) working days prior to the date fixed for the opening of the Proposals, and if requested, a copy will be delivered to the prospective bidder's representative. Failure of any Bidder to receive any such addenda shall not relieve said Bidder from any obligation under his Proposal as submitted. All addenda so issued shall become part of the Contract Documents.

I-2.04 BID SECURITY

Each Proposal must be accompanied by a certified or cashier's check issued by a solvent bank or trust company and payable at sight to the City of Tampa, in compliance with Section 255.051 Florida Statutes, or a Bid Bond upon the form provided herein, in an amount of not less than five percent of the sum of the computed total amount of the Bidder's Proposal as a guarantee that if the Proposal is accepted, the Bidder will execute and fill in the proposed Contract and Public Construction Bond within twenty (20) days after notice of award of the Contract. Certified checks shall have all necessary documentary revenue stamps attached if required by law. Surety on Bid Bonds shall be a duly authorized surety company authorized to do business in the State of Florida, and all such Bonds shall be issued or countersigned by a local resident producing agent, and satisfactory evidence of the authority of the person or persons executing such Bond to Execute the same shall be submitted with the Bond. Bid Bonds shall be issued by a surety company acceptable to the City.

Within ten (10) days after the opening of Proposals, the bid security of all but the three lowest Bidders will be returned. The bid security of the remaining two Bidders whose Proposals are not accepted will be

returned within ten (10) days after the execution of the Contract, or, if no such Contract has been executed, within ninety (90) days after the date of opening Proposals. The bid security of the Bidder whose Proposal is accepted will be returned only after he has duly executed the Contract and furnished the required Public Construction Bond and insurance.

Should it be necessary for the City to retain the bid security and said bid security is in the form of checks, the checks of these Bidders will be returned if replaced by Bid Bonds in an amount equal to the amount of the checks of such Bidders in such form and issued by a surety company acceptable to the City.

A Bidder may withdraw his Proposal before the time fixed for the opening of Proposals, without prejudice to himself, by communicating his purpose, in writing, to the Mayor and City Council, and when his communication is received, the Proposal will be handed to him or his authorized agent unopened. No Bidder may withdraw his Proposal within ninety (90) days after the day of opening Proposals.

The Bidder whose Proposal is accepted shall enter into a written contract, upon the Agreement form included herein, for the performance of the work and furnish the required Public Construction Bond within twenty (20) days after written notice by the City of Award of Contract has been served on such Bidder personally or after receipt of the written notice by registered mail to such Bidder at the address given in his Proposal.

If the Bidder to whom a Contract is awarded refuses or neglects to execute it or fails to furnish the required Public Construction Bond within twenty (20) days after receipt by him of the Notice of Award of Contract, the amount of his bid security shall be forfeited and shall be retained by the City as liquidated damages, and not as a penalty, it being now agreed that said sum is a fair estimate of the amount of damages that the City will sustain in case said Bidder fails to enter into a Contract and furnish the required Public Construction Bond. If a Bid Bond was furnished, the full amount of the Bond shall become due and payable as liquidated damages caused by such failure. The full amount of the bid security shall be forfeited as liquidated damages without consideration of the fact that an award may be less than the full amount of the Bidder's Proposal, excepting that the award shall be within the conditions of said Proposal relating to the basis of consideration for an award. No plea of mistake in the bid or misunderstanding of the conditions of forfeiture shall be available to the Bidder for the recovery of his deposit or as a defense to any action based upon the neglect or refusal to execute a contract.

I-2.05 LAWS AND REGULATIONS

The Bidder who is awarded the Contract must comply with all laws of the State of Florida, and all applicable Ordinances of the City of Tampa respecting labor and compensation and with all other statutes, ordinances, rules and regulations applicable and having the force of law.

I-2.06 PUBLIC CONSTRUCTION BOND

The Bidder who is awarded the Contract will be required to furnish a Public Construction Bond upon the form provided herein, equal to 100 percent of the Contract price, such Bond to be executed by a surety company acceptable to the City of Tampa and licensed to underwrite contracts in the State of Florida. Surety companies shall have a rating of not less than: B+ Class VI as evaluated in the most recently circulated BEST'S KEY RATING GUIDE PROPERTY-LIABILITY.

I-2.07 SIGNATURE AND QUALIFICATIONS OF BIDDERS

Proposals must be signed in ink by the Bidder with signature in full. When a firm is a Bidder, the Proposal shall be signed in the name of the firm by one or more of the partners. When a corporation is a Bidder the officer signing shall set out the corporate name in full beneath which he shall sign his name and give the title of his office. The Proposal shall also bear the seal of the corporation attested by its secretary. Anyone signing the Proposal as agent must file with it legal evidence of his authority to do so.

Bidders who are nonresident corporations shall furnish to the City a

duly certified copy of their permit to transact business in the State of Florida, signed by the Secretary of State, within ten days of the notice to do so. Such notice will be given to Bidders who are nonresident corporations, to whom it appears an award will be made, and the copy of the permit must be filed with the City before the award will be made. Failure to promptly submit this evidence of qualification to do business in the State of Florida may be basis for rejection of the Proposal.

I-2.08 REJECTION OF PROPOSALS

The City reserves the right to reject any Proposal if investigation of the Bidder fails to satisfy the City that such Bidder is properly qualified to carry out the obligations and to complete the work contemplated therein. Any or all Proposals will be rejected if there is reason to believe that collusion exists among Bidders. Proposals will be considered irregular and may be rejected if they show serious omissions, alterations in form, additions not called for, conditions or unauthorized alternates, or irregularities of any kind. The City reserves the right to reject any or all Proposals and to waive such technical errors as may be deemed best for the interests of the City.

I-2.09 QUANTITIES ESTIMATED ONLY

The estimate of quantities of the various items of work and materials, if set forth in the Proposal Form, is approximate only and is given solely to be used as a uniform basis for the comparison of Proposals.

The quantities actually required to complete the Contract work may be less or more than so estimated, and if awarded a Contract for the work specified, the Contractor agrees that he will not make any claim for damages or for loss of profits because of a difference between the quantities of the various classes of work assumed for comparison of Proposals and quantities of work actually performed. The City further reserves the right to vary the quantities in any amount.

I-2.10 COMPARISON OF PROPOSALS

Except jobs bid on a "One Lump Sum" basis, proposals will be compared on the basis of a total computed price arrived at by taking the sum of the estimated quantity of each item and the corresponding unit price of each item, and including any lump sum prices on individual items.

The computed total prices for individual Contract Items and the total computed price for the entire Contract, as entered by the Bidder in the Proposal Form, are for convenience only and are subject to correction in the tabulation and computation of the Proposals.

I-2.11 BASIS OF AWARD

The Contract will be awarded, if at all, to the lowest responsible Bidder or Bidders, as determined by the City and by the terms and conditions of the Contract Documents. Unless all bids are rejected, the award will be made within ninety (90) days after the opening of Proposals. The successful Bidder will be required to possess, or obtain, a valid City Occupational License.

I-2.12 INSURANCE REQUIRED

The successful Bidder and his subcontractors will be required to procure and pay for insurance covering the work in accordance with the provisions of Article 6.02 of the Agreement as indicated on special instructions pages beginning with INS-1.

I-2.13 NO ASSIGNMENT OF BID

No Bidder shall assign his bid or any rights thereunder.

I-2.14 NONDISCRIMINATION IN EMPLOYMENT

Contracts for work under this Proposal will obligate the contractors and subcontractors not to discriminate in employment practices.

Bidders must, if requested, submit with their initial bid a signed statement as to whether they have previously performed work subject to the President's Executive Order Nos. 11246 and 11375.

Bidders must, if requested, submit a compliance report concerning their employment practices and policies in order to maintain their eligibility to receive the award of the Contract.

Successful Bidders must, if requested, submit a list of all subcontractors who will perform work on the project and written,

signed statement from authorized agents of the labor pools with which they will or may deal for employees on the work together with supporting information to the effect that said labor pools practices and policies are in conformity with Executive Order No. 11246 and that said labor pools will affirmatively cooperate in or offer no hindrance to the recruitment, employment and equal treatment of employees seeking employment and performing work under the Contract, or a certification as to what efforts have been made to secure such statements when such agents or labor pools have failed or refused to furnish them prior to the award of the Contract.

I-2.15 LABOR STANDARDS

The Bidder's attention is directed to the Contract Provisions of the Labor Standards for federally assisted projects which may be attached to and made a part of the Agreement.

I-2.16 NOTICE TO LABOR UNIONS

If applicable, the successful Bidder will be required to provide Labor Unions and other organizations of workers a completed copy of the form entitled "Notice to Labor Unions or Other Organizations of Workers", and such form may be made a part of the Agreement.

I-2.17 NOTICE TO PROSPECTIVE FEDERALLY-ASSISTED CONSTRUCTION CONTRACTORS

A Certification of Nonsegregated Facilities, as required by the May 9, 1967, Order (32 F.R. 7439, May 19, 1967) on Elimination of Segregated Facilities, by the Secretary of Labor, must be submitted to said Secretary prior to the award of a federally-assisted construction and Contract exceeding \$10,000 which is not exempt from the provisions of the Equal Opportunity Clause. The form of certification may be bound herein following the form of Bid Bond.

Contractors receiving federally-assisted construction Contract awards exceeding \$10,000 which are not exempt from the provisions of the Equal Opportunity Clause will be required to provide for the forwarding of the following notice to prospective subcontractor for supplies and construction contracts where the subcontracts exceed \$10,000 and are not exempt from the provisions of the Equal Opportunity Clause:

NOTICE TO PROSPECTIVE SUBCONTRACTORS OF REQUIREMENT FOR CERTIFICATIONS OF NONSEGREGATED FACILITIES

"A Certification of Nonsegregated Facilities, as required by the May 9, 1967, Order (32 F.R. 7439, May 19, 1967) on Elimination of Segregated Facilities, by the Secretary of Labor, must be submitted prior to the award of a subcontract exceeding \$10,000 which is not exempt from the provisions of the Equal Opportunity Clause."

"Contractors receiving subcontract awards exceeding \$10,000 which are not exempt from the provisions of the Equal Opportunity Clause will be required to provide from the forwarding of this notice to prospective subcontractors for supplies and construction contracts where the subcontracts exceed \$10,000 and are not exempt from the provisions of the Equal Opportunity Clause."

The United States requires a pre-award conference if a proposed construction contract exceeds one million dollars to determine if the the prospective contractor is in compliance with the Equal Employment Opportunity requirements of Executive Order 11246 of September 24, 1965. In such instances, a meeting may be scheduled at which the prospective contractor must specify what affirmative action he has taken or proposed to take to assure equal employment opportunity which must be approved by the United States before award of the contract will be authorized.

Bidders must be prepared to submit an Equal Employment Opportunity (EEO) plan at a pre-award conference. The plan must include bidding opportunities offered by the Bidder to minority subcontractors.

On October 13, 1971, President Nixon issued Executive Order 11246 emphasizing the government's commitment to the promotion of minority business enterprise. Accordingly, the United States is firmly

committed to the utilization of available resources to support this important program. U.S. agencies are most interested in realizing minority participation on the subject. Achieving equal employment opportunity compliance is required through Executive Order 11246. WE cannot emphasize too strongly that minority subcontractors be extended subcontractors bidding opportunities as but one step in your affirmative action policy.

Due to the importance of this contract, U.S. Agencies may conduct an EEO Conference prior to the award of the Contract. It is suggested that the responsive Bidder confirm the minority subcontractors he contacted for bids or quotations in his EEO plan submitted at the conference.

I-2.18 EEO AFFIRMATIVE ACTION REQUIREMENTS

By the submission of a Proposal, each Bidder acknowledges that he understands and will agree to be bound by the equal opportunity requirements of Federal regulations which shall be applicable throughout the performance of work under any contract awarded pursuant to solicitation. Each Bidder agrees that if awarded a contract, he will similarly bind contractually each subcontractor. In policies, each Bidder further understands and agrees that if awarded a contract, he must engage in Affirmative Action directed to promoting and ensuring equal employment opportunity in the work force used under the contract (and he must require contractually the same effort of all subcontractors whose subcontracts exceed \$100,000). The Bidder understands and agrees that "Affirmative Action" as used herein shall constitute a good faith effort to achieve and maintain minority employment in each trade in the on-site work force used on the project. ***** END of SECTION *****

ORDINANCE NO. 2021- 33

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AN ORDINANCE OF THE CITY OF TAMPA, FLORIDA, AMENDING CITY OF TAMPA CODE OF ORDINANCES CHAPTER 26.5 TO ADD "ARTICLE IV. APPRENTICE REQUIREMENTS IN CITY CONSTRUCTION CONTRACTS"; SECTIONS 26.5-211 THROUGH 26.5-216; TO ESTABLISH REQUIREMENTS PERTAINING TO THE USE OF APPRENTICE LABOR IN CERTAIN CITY OF TAMPA CONSTRUCTION PROJECTS, TO INCLUDE SPECIFIC EXCEPTIONS THERETO; TO PROVIDE CONDITIONS RELATING TO DOCUMENTATION, INCENTIVE FOR COMPLIANCE, FEE FOR NONCOMPLIANCE AND OTHER REMEDIES, IMPLEMENTATION, EXPANSION OF SCOPE AND REPORTING; REPEALING ALL ORDINANCES OR PARTS OF ORDINANCES IN CONFLICT THEREWITH; PROVIDING FOR SEVERABILITY; PROVIDING AN EFFECTIVE DATE.

WHEREAS, construction contractors in the City of Tampa have identified a shortage of skilled labor for construction projects and a need to train younger workers as the existing job force ages; and

WHEREAS, this shortage of labor could result in delays, expenses, and other challenges to the City's future construction projects; and

WHEREAS, the City of Tampa has determined that apprenticeships create opportunities for training and experience that will assist in ensuring that a trained workforce will be available for future City construction projects; and

WHEREAS, requiring the employment of apprentices on certain City of Tampa construction projects will promote business and economic development by increasing the number of skilled workers in the City; and

WHEREAS, the City of Council of the City of Tampa has determined that the creation of Chapter 26.5, Article IV, pertaining to Apprentice Requirements in City Construction Projects, is appropriate and in the interest of the public health, safety or welfare of the City of Tampa at this time; and

WHEREAS, duly noticed public hearings, as required by law, were held by the City Council of the City of Tampa at which all residents and interested persons were given an opportunity to be heard.

1 **NOW, THEREFORE,**
2

3 **BE IT ORDAINED BY THE CITY COUNCIL**
4 **OF THE CITY OF TAMPA, FLORIDA:**
5

6 **Section 1.** That the recitals set forth above are hereby incorporated as if fully set
7 forth herein.
8

9 **Section 2.** That the City of Tampa Code, Section 26.5, is hereby amended by
10 creating Article IV, Sections 26.5-211 through 26.5-216, to read as follows:
11

12 **"ARTICLE IV.- APPRENTICE REQUIREMENTS IN CITY CONSTRUCTION CONTRACTS**
13

14 **DIVISION 1. - IN GENERAL**
15

16 **Sec 26.5-211. – Title; Applicability.**

17 This Article IV shall be known and may be cited as the "City of Tampa Apprentice
18 Requirements in City Construction Contracts Ordinance". This Article shall apply to
19 contracts for certain City of Tampa construction projects as specified in more detail
20 herein.

21 **Sec. 26.5-212. Legislative Findings and Intent.**

22 (a) There is a shortage of skilled labor for construction projects and a need to train
23 younger workers as the existing job force ages. This shortage of labor could result in
24 delays, expenses, and other challenges to the City's future construction projects.
25 Apprenticeships create opportunities for training and experience that will assist in
26 ensuring that a trained workforce will be available for future City construction
27 projects. By requiring contactors to use apprentices for City construction contracts,
28 it is the intent of the City to increase the number of apprentices used by contractors,
29 creating opportunities that will enable these apprentices to develop into more skilled
30 labor that will then be available for City construction projects.

31 (b) Apprenticeship programs are recognized as an effective means of providing
32 training and experience to individuals seeking to enter or advance in the workforce,
33 offering an opportunity to earn wages while acquiring valuable marketable skills. The
34 training that apprentices receive on city projects will also help them to market their
35 skills to other contractors. In this way, apprenticeship training helps create a skilled
36 pipeline of talent to support and sustain ongoing economic development activities in
37 the City of Tampa.

38 **Sec.26.5-213. - Definitions.**

39 *Apprentice* means any person who is enrolled in and participating in an
40 apprenticeship program or on-the-job training program registered with the
41 Florida Department of Education or the United States Department of Labor, or in

1 a registered on-the-job training program, as defined in Chapter 446, Florida
2 Statutes.

3 *Bidder* means any individual, firm, corporation, partnership, company,
4 association, joint venture, or other entity that seeks the award of a construction
5 contract.

6 *Contractor* means any individual, firm, corporation, partnership, company,
7 association, joint venture, or other entity that has a construction contract with the
8 City.

9 *Construction contract*, for purposes of this article, means a contract
10 between the City and a contractor for a vertical construction project, as defined
11 herein. By no later than one year after implementation of this ordinance, this
12 definition shall be expanded to include horizontal construction projects, as also
13 defined herein.

14 *Vertical construction project* means a project, funded by City dollars in an
15 amount of at least one million dollars (\$1,000,000) priced on the basis of a lump
16 sum/fixed price amount, that involves the process of building, altering, repairing,
17 improving, or demolishing any public structure or building, or other public
18 improvements of any kind that are predominantly vertical (i.e., above-ground), on
19 or to any real property owned or under the control of the City, which work is being
20 performed under a construction contract. For purposes of this article, vertical
21 construction also includes on-site horizontal work that is integral to or part of the
22 vertical construction project.

23 *Horizontal construction project* means a project, funded by City dollars in
24 an amount of at least one million dollars (\$1,000,000) priced on the basis of a
25 lump sum/fixed price amount, that involves construction of highways, roads,
26 streets, bridges, utilities, water distribution or transmission pipelines, wastewater
27 interceptors, force mains or collection systems, and stormwater conveyance
28 facilities. For purposes of this article, horizontal construction also includes
29 rehabilitation of water, wastewater and stormwater pipelines including, but not
30 limited to, cured-in place, pulled-in place and pipe bursting methods.

31 *Good faith effort* means that the contractor, without an intent to defraud
32 or seek an unfair advantage, took all necessary steps to secure and maximize,
33 consistent with the requirements of this section, the required percentage for
34 apprentices on a construction project, to the satisfaction of the City of Tampa.
35 The contractor shall provide evidence of good faith efforts for consideration by
36 the City, which evidence may include documentation of the contractor's contacts

1 with the Florida Department of Education, Division of Career and Adult
2 Education's Apprenticeship Section; documentation of its contacts with state-
3 approved training programs, with labor organizations, and/or with technical
4 schools and training schools; documentation of its use of job fairs and other
5 outreach efforts; the frequency and duration of any employment advertisements
6 for apprentices; the extent to which the size of a contractor's workforce affects its
7 hiring opportunities for apprentices; and any other evidence demonstrating to the
8 satisfaction of the City that the contractor made a good faith attempt to secure
9 apprentice labor.

10 *Subcontractor* means an entity or individual providing services to the City
11 through a contractor for all or any portion of the construction contract.

12 *Labor hours* means the total hours worked on the site of a construction
13 project by workers who are employed by contractors or subcontractors on the
14 construction project, excluding hours worked by forepersons, superintendents, or
15 owners. Notwithstanding the above, the percentage requirements of this article
16 shall apply to the labor hours performed in a trade(s) for which registered
17 apprenticeship programs or on-the-job training programs exist.

18 **Sec. 26.5-214. - Apprenticeship Requirements and Exceptions.**

19 (a) When responding to a City of Tampa solicitation for a vertical construction project, a
20 bidder must certify that:

- 21 (1) The bidder or its subcontractors participate in an apprenticeship program that is
22 registered with the Florida Department of Education or the United States
23 Department of Labor; or
- 24 (2) The bidder commits that at the time the bidder executes a construction contract,
25 it or its subcontractors will be participating in an apprenticeship program that is
26 approved by the Florida Department of Education or the United States
27 Department of Labor or an on-the-job training program; or
- 28 (3) The bidder has submitted documentation that confirms, to the satisfaction of the
29 City of Tampa, that there are no registered apprenticeship or on-the-job training
30 programs for any type of work to be performed on the construction project.

31 (b) Prior to the City entering a construction contract, the City must receive
32 documentation from the bidder verifying compliance with Section 26-214(a).

33 (c) For the duration of the construction contract, as same may be extended including
34 through the issuance of change orders, at least 12% of the labor hours performed in
35 a trade(s) for which registered apprenticeship programs or on-the-job training
36 programs exist, including all work performed pursuant to change orders, must be

1 performed by apprentices employed by the contractor or subcontractors, with
2 required documentation provided to the City as set forth in Sec. 26-215 herein.

3 (d) If the contractor is unable to achieve or maintain the required percentage, the
4 contractor must notify the City in writing and document its good faith effort, as
5 defined herein, made to achieve or maintain the required percentage. The City will
6 then determine whether the contractor made all required good faith effort by
7 evaluating the contractor's submitted documentation.

8 (e) The construction contract between the City and the contractor must include a
9 provision requiring the contractor and its subcontractors to comply with the
10 requirements of this article.

11 (f) Exceptions.

12 (1) This article will not apply if:

13 a. It is prohibited by or in conflict with federal or state law or the terms of a
14 federal or state grant applicable to the construction project; or

15 b. The Mayor or the Mayor's designee determines that emergency
16 circumstances exist such that applying the article to the construction project
17 is not in the best interest of the City.

18 (2) This article will not apply to a subcontractor that is a WMBE or SLBE if the
19 compensation to be paid under the applicable subcontract for labor costs is less
20 than \$1,000,000.

21 (3) The twelve percent (12%) requirement of labor hours on the construction
22 project that must be performed by apprentices may be reduced by the Mayor or
23 the Mayor's designee if:

24 a. The contractor has successfully demonstrated to the City, after making a
25 good faith effort as defined herein, that the contractor has been unable to
26 find, or there does not exist, a sufficient number or type of apprentices
27 available to meet the required percentage; or

28 b. The Mayor or the Mayor's designee determines that there exists, for the
29 construction project at issue, a disproportionately high ratio of material
30 costs to labor hours, which makes infeasible the required percentage of
31 apprentice participation.

32
33 **Sec. 26.5-215. - Required Documentation, Incentive for Compliance, and**
34 **Noncompliance Fee and Other Remedies.**

35
36 (a) *Required documentation.* The contractor must prepare, submit, and certify, on a
37 monthly basis for the duration of the construction contract, accurate and timely
38 records, on a form prepared by the City, identifying the name, hourly rate, and trade
39 classification of each apprentice, the cumulative number of hours worked on the

1 project to date by apprentices, and the labor hours of all workers used by the
2 contractor and each subcontractor on the construction project. If a subcontractor
3 uses apprentices that will be included to satisfy the 12% requirement set forth herein,
4 the contractor must require that the subcontractors prepare, maintain, and certify,
5 for submittal by the contractor to the City, accurate and timely records, on a form
6 prepared by the City, identifying for such subcontractor, the name, hourly rate, trade
7 classification, labor hours for apprentices used by the subcontractor on the
8 construction project, and labor hours of all workers used by the subcontractor on the
9 construction project.

10 (b) *Incentive for Compliance.* At the point at which a contract is 50% complete, the City
11 will reduce 1% of the retainage, provided the City has determined that (i) the
12 contractor is in compliance with the percentage requirements of subsection 26.5-
13 214(c) for the work performed to date, and (ii) is otherwise performing its contract
14 obligations to the full satisfaction of the City.

15 (c) *Fee for Partial Compliance or Noncompliance.* Contracts for all projects to which these
16 requirements apply will provide that if a contractor fails to fully comply with the
17 percentage requirements of subsection 26.5-214(c), and the requirement is not
18 adjusted in writing by the Mayor or the Mayor's designee, as provided for above, the
19 contractor will be assessed a penalty fee amount for each hour that is not achieved.

20 1. The amount per hour shall be based on the extent to which the contractor or
21 subcontractor met the 12% labor hour requirement. The fee schedule for the
22 amount per hour that will be assessed shall be adopted by Resolution.

23 2. The assessments imposed shall be deducted from the contractor's final pay
24 application and shall be utilized to support construction/building trade apprentice
25 training programs registered with the State of Florida or the United States
26 Department of Labor and located within Hillsborough County, and/or such
27 apprentice training programs provided by the Hillsborough County School District.

28 (d) *Noncompliance-Other Remedies.* Failure of a contractor to comply with the
29 requirements of this article may subject the contractor to all remedies available to the
30 City at law, including but not limited to debarment or suspension of the contractor
31 from consideration for the award of future contracts, and termination of the
32 construction contract.

33 **Sec. 26.5-216.- Implementation, Expansion of Scope to include Horizontal Construction,**
34 **and Reporting.**

35 (a) *Implementation.* The Mayor or the Mayor's designee shall implement the provisions
36 of this ordinance no later than six months from its effective date.

37 (b) *Expansion of the Scope of the Apprentice Requirements to apply to Horizontal*
38 *Construction.* By no later than twelve months after implementation of this ordinance,
39 this article shall be amended as necessary to expand its application to horizontal
40 construction contracts, as defined herein.

1 (c) *Reporting.* At six month intervals during the first year after implementation of this
2 article, and thereafter on an annual basis, the Mayor or the Mayor's designee shall
3 prepare a report to be presented on the agenda of the City Council, that includes for
4 each contract to which this article applies, a line item breakdown of: the name of the
5 contractor, the name or description of the construction project, the total dollar value
6 of the construction project, the number of apprentices hired for the construction
7 project, the number of apprentice hours worked on the construction project, and the
8 total labor hours expended on the construction project. Additionally, the report will
9 identify any contracts where the 12% requirement was not met, and the reason; a
10 report on outreach efforts made by the City Council and the City Administration, along
11 with any other relevant details or recommendations regarding the City's
12 apprenticeship requirements that the Mayor or the Mayor's designee wish to include.

13
14 **Section 3.** That all ordinances or parts of ordinances in conflict herewith are repealed
15 to the extent of any conflict with the terms of this ordinance.

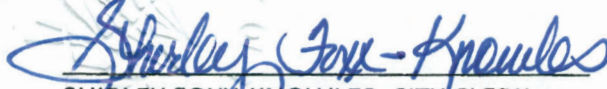
16
17 **Section 4.** That if any part of this Ordinance shall be declared unconstitutional or
18 invalid by a court of competent jurisdiction, the remaining provisions shall remain in full
19 force and effect.

20
21 **Section 5.** Except to the extent expressly addressed herein, this Ordinance shall take
22 effect immediately upon becoming a law.


23
24
25 PASSED AND ORDAINED BY THE CITY COUNCIL OF THE CITY OF TAMPA,
26 FLORIDA, ON March 18, 2021.

27
28
29 
30 _____
31 CHAIRMAN/CHAIRMAN PRO-TEM,
32 CITY COUNCIL

33 ATTEST;

34 
35 _____
36 SHIRLEY FOXX-KNOWLES, CITY CLERK

37
38 APPROVED BY ME ON 3/22/21

39
40 
41 _____
42 JANE CASTOR, MAYOR
43

f

RESOLUTION 2021 - 527

RESOLUTION ESTABLISHING A SCHEDULE OF FEES FOR PARTIAL COMPLIANCE OR NONCOMPLIANCE WITH APPRENTICE LABOR HOUR PERCENTAGE REQUIREMENTS PURSUANT TO CHAPTER 26.5, ARTICLE IV. APPRENTICE REQUIREMENTS IN CITY CONSTRUCTION CONTRACTS, SUBSECTION 26.5-215(c)1, OF THE CITY OF TAMPA CODE; PROVIDING AN EFFECTIVE DATE.

WHEREAS, on March 18, 2021, City Council adopted Ordinance No. 2021-33, which added Chapter 26.5, Article IV., Apprentice Requirements in City Construction Projects, Sections 26.5-211 through 26.5-216, to the City of Tampa Code (the "Apprentice Ordinance"); and

WHEREAS, Subsection 26.5-215(c) provides for the assessment of a fee for partial compliance or noncompliance with the apprentice labor hour percentage requirements of subsection 26.5-214(c), with the fee amount to be based on the extent to which the contractor or subcontractor met the apprentice labor hour requirements under the ordinance; and

WHEREAS, Subsection 26.5-215(c)1. provides for the adoption of a fee schedule by Resolution; and

WHEREAS, the fees established pursuant to this Resolution are reasonable and are consistent with the purpose, intent and express requirements of the Apprentice Ordinance.

NOW, THEREFORE,

BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF TAMPA, FLORIDA:

Section 1. That pursuant to the authority of Section 26.5-215(c)1., the following is the schedule of fees for partial compliance or noncompliance with the apprentice labor hour requirements of subsection 26.5-214(c), City of Tampa Code:

Percent of goal met	Assessment per unmet hour
100%	\$0.00
90% to 99%	\$2.50
75% to 89%	\$5.25
50% to 74%	\$8.00
1% to 49%	\$11.25
0%	\$15.00

Section 2. That the proper officers of the City of Tampa are hereby authorized and directed to do all things necessary and proper in order to carry out and make effective the provisions of this resolution.

F21-69470

CITY OF TAMPA INSURANCE REQUIREMENTS

Prior to commencing any work or services or taking occupancy under that certain written agreement or award (for purposes of this document, Agreement) between the City of Tampa, Florida (City) and Firm/Awardee/Contractor/Consultant/Lessee/non-City party, etc. (for purposes of this document, Firm) to which this document is attached and incorporated as an Exhibit or otherwise, and continuing during the term of said Agreement (or longer if the Agreement and/or this document so requires), Firm shall provide, pay for, and maintain insurance against claims for injuries to persons (including death) or damages to property which may arise from or in connection with the performance of the Agreement (including without limitation occupancy and/or use of certain property/premises) by Firm, its agents, representatives, employees, suppliers, subtenants, or subcontractors (which term includes sub-consultants, as applicable) of any tier subject to the terms and conditions of this document. Firm's maintenance of insurance coverage as required herein is a material element of the Agreement and the failure to maintain or renew coverage or provide evidence of same (defined to include without limitation Firm's affirmative duty to provide from time to time upon City's request certificates of insurance, complete and certified copies of Firm's insurance policies, forms, and endorsements, information on the amount of claims payments or reserves chargeable to the aggregate amount of coverage(s) whether during the term of the Agreement or after as may be requested by the City in response to an issue or potential claim arising out of or related to the Agreement to which Firm's insurance obligations hereunder may apply or possibly help mitigate) may be treated as a material breach of the Agreement. Should at any time Firm not maintain the insurance coverages required, City at its sole option (but without any obligation or waiver of its rights) may (i) terminate the Agreement or (ii) purchase such coverages as City deems necessary to protect itself (charging Firm for same) and at City's option suspending Firm's performance until such coverage is in place. If Firm does not reimburse City for such costs within 10 days after demand, in addition to any other rights, City shall also have the right to offset such costs from amounts due Firm under any agreement with the City. All provisions intended to survive or to be performed subsequent to the expiration or termination of the Agreement shall survive, including without limitation Firm's obligation to maintain or renew coverage, provide evidence of coverage and certified copies of policies, etc. upon City's request and/or in response to a potential claim, litigation, etc.

The City reserves the right from time to time to modify or waive any or all of these insurance requirements (or to reject policies) based on the specific nature of goods/services to be provided, nature of the risk, prior experience, insurer, coverage, financial condition, failure to operate legally, or other special circumstances. If Firm maintains broader coverage and/or higher limits than the minimums shown herein, the City requires and shall be entitled to such broader coverage and/or higher limits maintained by Firm. Any available insurance proceeds in excess of the specified minimum limits of insurance and coverage shall be available to the City. No representation is made that the minimum insurance requirements are sufficient to cover Firm's interests, liabilities, or obligations. Required insurance shall not limit Firm's liability.

Firm acknowledges and agrees Firm and not the City is the party in the best position to determine applicability (e.g. "IF APPLICABLE"), confirm, and/or verify its insurance coverage. Acceptance by the City, or by any of its employees, representatives, agents, etc. of certificates or other documentation of insurance or policies pursuant to the terms of this document and the Agreement evidencing insurance coverages and limits does not constitute approval or agreement that the insurance requirements have been met or that coverages or policies are in compliance. Furthermore, receipt, acceptance, and/or approval of certificates or other documentation of insurance or policies or copies of policies by the City, or by any of its employees, representatives, agents, etc., which indicate less coverage than required does not constitute a waiver of Firm's obligation to fulfill these insurance requirements.

MINIMUM SCOPE AND LIMIT OF INSURANCE ¹

A. Commercial General Liability (CGL) Insurance on the most current Insurance Services Office (ISO) Form CG 00 01 or its equivalent on an "occurrence" basis (Modified Occurrence or Claims Made forms are not acceptable without prior written consent of the City). Coverage must be provided to cover liability contemplated by the Agreement including without limitation premises and operations, independent contractors, contractual liability, products and completed operations, property damage, bodily, personal and advertising injury, contractual liability, explosion, collapse, underground coverages, personal injury liability, death, employees-as-insureds. Products and completed operations liability coverage maintained for at least 3 years after completion of work. Limits shall not be less than \$1M per occurrence and \$2M general aggregate for Agreements valued at \$2M or less; if valued over \$2M, a general aggregate limit that equals or exceeds the Agreement's value. If a general aggregate limit applies; it shall apply separately to the project/location (ISO CG 2S 03 or 2S 04 or equivalent). **(ALWAYS APPLICABLE)**

B. Automobile Liability (AL) Insurance in accordance with Florida law, as to the ownership, maintenance, and use of all owned, non-owned, leased, or hired vehicles. AL insurance shall not be less than: (a) \$500,000 combined single limit each occurrence bodily injury and property damage for Agreements valued at \$100,000 or less or (b) \$1M combined single limit each occurrence bodily injury and property damage for Agreements valued over \$100,000. If transportation of hazardous material involved, the MCS-90 endorsement (or equivalent). **(ALWAYS APPLICABLE)**

C. Worker's Compensation (WC) & Employer's Liability Insurance for all employees engaged under the Agreement, Worker's Compensation as required by Florida law. Employer's Liability with minimum limits of (a) \$500,000 bodily injury by accident and each accident, bodily injury by disease policy limit, and bodily injury by disease each employee for Agreements valued at \$100,000 and under or (b) \$1M bodily injury by accident and each accident, bodily injury by disease policy limit, and bodily injury by disease each for all other Agreements. **(ALWAYS APPLICABLE)**

D. Excess (Umbrella) Liability Insurance for Agreements valued at \$2M or more, at least \$4M per occurrence in excess of underlying limits and no more restrictive than underlying coverage for all work performed by Firm. May also compensate for a deficiency in CGL, AL, or WC. **(ALWAYS APPLICABLE)**

E. Builder's Risk Insurance for property loss exposure associated with construction/renovation/additions to buildings or structures, including materials or fixtures to be incorporated. Must be "All Risk" form with limits of no less than the project's completed value, have no coinsurance penalties, eliminate the "occupancy clause", cover Firm (together with its contractors, subcontractors of every tier, and suppliers), and name City as a Loss Payee. **(IF APPLICABLE)**

F. Installation Floater coverage for property (usually highly valued equipment or materials such as compressors, generators, etc.) during its installation. Coverage must be "All Risk" including installation and transit for no less than 100% of the installed replacement cost value. **(IF APPLICABLE)**

G. Architects & Engineers Liability/ Professional Liability (E&O)/ Contractors Professional Liability (CPL)/ Medical Malpractice Insurance where Agreement involves Florida-regulated professional services (e.g. architect, engineer, design-builder, CM, accountant, appraiser, investment banker medical professional) at any tier, whether employed or independent, vicarious design liability exposure (e.g. construction means & methods, design supervision), value engineering, constructability assessments/reviews, BIM process, and/or performance specifications. Limits of at least \$1M per occurrence and \$2M aggregate; deletion of design/ build liability exclusions, as applicable, and maintained for at least 3 years after completion of work/services and City's acceptance of same. **(IF APPLICABLE)**

H. Railroad Protective Liability CRPL Insurance for construction within 50ft of operated railroad track(s) or where affects any railroad bridge, trestle, tunnel, track(s) roadbed, or over/under pass. Subject to involved rail road's approval prior to commencement of work. **(IF APPLICABLE)**.

I. Pollution and/or Asbestos Legal Liability Insurance where Agreement involves asbestos and/or environmental hazards/contamination risks (defined broadly, e.g. lead, mold, bacteria, fuel storage, underground work, cleanup (owned or non-owned sites), pollutant generation/transportation, marine/natural resource damage, contamination claim, restitution, business interruption, mold, fungus, lead-based paint, 3rd party claims/removal, etc.), with limits of at least \$1M per occurrence and \$2M aggregate, maintained for at least 3 years after Agreement completion. **(IF APPLICABLE)**

J. Cyber Liability Insurance where Agreement involves portals allowing access to obtain, use, or store data; managed dedicated servers; cloud hosting services; software/hardware; programming; and/or other IT services

¹ "M" indicates million(s), for example \$1M is \$1,000,000

and products are involved. Limits of not less than \$2M per occurrence and \$2M aggregate. Coverage sufficiently broad to respond to duties and obligations undertaken by Firm, and shall include, but not be limited to, claims involving infringement of intellectual property/copyright, trademark, trade dress, invasion of privacy violations, damage to or destruction of electronic information, information theft, release of confidential and/or private information, alteration of electronic information, extortion, virus transmission, and network security. Coverage, as applicable and with sufficient limits to respond, for breach response costs, regulatory fines and penalties, credit monitoring expenses. **(IF APPLICABLE)**

K. Drone/UAV Liability Insurance where Agreements involves unmanned aerial vehicles/drones. Coverage to include products and completed operations, property damage, bodily injury with limits no less than \$1M per occurrence, and \$2M aggregate; may be provided by CGL endorsement subject to City's prior written approval. **(IF APPLICABLE)**

L. Longshore & Harbor Workers' Compensation Act/Jones Act for work being conducted near, above, or on "navigable waters" for not less than the above Employer's Liability Insurance limit. **(IF APPLICABLE)**

M. Garagekeeper/Hangerkeeper/Marina Operator Legal Liability Insurance and/or Hull/P&I Insurance where parking lot, valet, dealership, garage services, towing, etc. and/or operation of a hangar, marina, or air

plane/ship repairer, providing safe berth, air/watercraft storage/docking (on land/ in water), fueling, tours, charters, ferries, dredges, tugs, mooring, towing, boat/aircraft equipment/repair/alteration/maintenance, etc.; cover- age against liability for damage to vehicles air/watercraft, their machinery in Firm's care, custody, or control both private & commercial. Limits at least equal to greater of \$1M, value of max number of vehicles that may be in Firm's custody, or of most costly object in Firm's custody. **(IF APPLICABLE)**

N. Property Insurance and Interruption of Business CIOB) Insurance where premises, building, structure, or improved real property is leased, licensed, or otherwise occupied by Firm. Property Insurance against all risks of loss to any occupant/tenant improvements at full replacement cost with no coinsurance penalty, including fire, water, leak damage, and flood, as applicable, vandalism and malicious mischief endorsements. IOB by which minimum monthly rent will be paid to City for up to 1 year if premises are destroyed, rendered inaccessible or untenable, including disruption of utilities, water, or telecommunications. **(IF APPLICABLE)**

O. Liquor Liability/Host Liquor Liability where Firm directly or indirectly provides alcoholic beverages, limits of at least \$1M per occurrence and \$1M aggregate. **(IF APPLICABLE)**

P. Educators Legal Liability Insurance where day care, after school program, recreational activities, etc. limits per G above. **(IF APPLICABLE)**

ADDITIONAL REQUIREMENTS

ACCEPTABILITY OF INSURERS- Insurance is to be placed with insurers admitted in the State of Florida and who have a current A.M. Best rating of no less than **A-:VII** or, if not rated by A.M. Best, as otherwise approved by the City in advance and in writing.

ADDITIONAL INSURED - **City, its elected officials, departments, officers, officials, employees, and volunteers together with, as applicable, any associated lender of the City shall be covered as additional insureds on all liability coverage** (e.g. CGL, AL, and Excess (Umbrella) Liability) as to liability arising out of work or operations performed by or on behalf of Firm including materials, parts, or equipment furnished in connection with such work or operations and automobiles owned, leased, hired, or borrowed by or on behalf of Firm. Coverage can be provided in the form of an endorsement to Firm's insurance (at least as broad as ISO Form CG 20 10 11 85 or **both** CG 10 20, CG 20 26, CG 20 33, or CG 20 38 **and** CG 20 37 if later revisions used).

CANCELLATION/NON-RENEWAL – Each insurance policy shall provide that at least 30 days written notice must be given to City of any cancellation, intent to non-renew, or material reduction in coverage (except aggregate liability limits) and at least 10 days' notice for non-payment of premium. Firm shall also have an independent duty to notify City in like manner, within 5 business days of Firm's receipt from its insurer of any notices of same. If any policy's aggregate limit is reduced, Firm shall directly take steps to have it reinstated. Notice and proof of renewal/continued coverage/certifications, etc. shall be sent to the City's notice (or Award contact) address as stated in the Agreement with a copy to the following:

- Contract Administration Department, 306 E Jackson St, Tampa, FL 33602 Purchasing Department, 306 E Jackson Street, Tampa, FL 33602
 Other: _____

CERTIFICATE OF INSURANCE (COI) – to be provided to City by insurance carrier prior to Firm beginning any work/services or taking occupancy and, if the insurance expires prior to completion of the work or services or Agreement term (as may be extended), a renewal COI at least 30 days before expiration to the above address(es). COIs shall specifically identify the Agreement and its subject (project, lease, etc.), shall be sufficiently comprehensive to insure City (named as additional insured) and Firm and to certify that coverage extends to subcontractors' acts or omissions, and as to permit the City to determine the required coverages are in place without the responsibility of examining individual policies. **Certificate Holder must be The City of Tampa, Florida.**

CLAIMS MADE – If any liability insurance is issued on a claims made form, Firm agrees to maintain such coverage uninterrupted for at least 3 years following completion and acceptance of the work either through purchase of an extended reporting provision or purchase of successive renewals. The Retroactive Date must be shown and be a date not later than the earlier of the Agreement date or the date performance/occupancy began thereunder.

DEDUCTIBLES/ SELF-INSURED RETENTIONS (SIR) – must be disclosed to City and, if over \$500,000, approved by the City in advance and in writing, including at City's option being guaranteed, reduced, or eliminated (additionally if a SIR provides a financial guarantee guaranteeing payment of losses and related investigations, claim administration, and defense expenses). Firm shall be fully responsible for any deductible or SIR (without limiting the foregoing a policy with a SIR shall provide or be endorsed to provide that the SIR may be satisfied by either the City or named insured). In the event of loss which would have been covered but for a deductible or SIR, City may withhold from any payment due Firm, under any agreement with the City, an amount equal to same to cover such loss should full recovery not be obtained under the policy.

PERFORMANCE- All insurance policies shall be fully performable in Hillsborough County, Florida (the County), and construed in accordance with Florida law. Further, all insurance policies must expressly state that the insurance company will accept service of process in the County and that the exclusive venue for any action concerning any matter under those policies shall be in the appropriate state court of the County.

PRIMARY POLICIES - Firm's insurance coverage shall be primary insurance coverage at least as broad as ISO CG 20 01 04 13 as to the City, its elected officials, departments, officers, employees, and volunteers. Any insurance or self-insurance maintained by the City, its elected officials, departments, officers, employees, and volunteers shall be excess of the Firm's insurance and shall not contribute with it.

SUBCONTRACTORS/INDEPENDENT ASSOCIATES/CONSULTANTS/SUBTENANTS/SUBLICENSEE - **Firm shall require and verify that all such entities maintain insurance meeting all requirements stated herein with the City as an additional insured** by endorsement (ISO FORM CG 20 38, or broader) or otherwise include such entities within Firm's insurance policies. Upon City's request, Firm shall furnish complete and certified copies of copies of such entities' insurance policies, forms, and endorsements.

SUBCONTRACTOR DEFAULT INSURANCE CONTROLLED INSURANCE PROGRAM, WRAP-UP. Use requires express prior written consent of City Risk Manager.

UNAVAILABILITY- To the fullest extent permitted by law, if Firm is out of business or otherwise unavailable at the time a claim is presented to City, Firm hereby assigns to the City all of its right, title and interest (but not any liabilities or obligations) under any applicable policies of insurance.

WAIVER OF SUBROGATION – With regard to any policy of insurance that would pay third party losses, Firm hereby grants City a waiver of any right to subrogation which any insurer of Firm may acquire against the City by virtue of the payment of any loss under such insurance. Firm agrees to obtain any endorsement that may be necessary to affect such waiver, but this provision shall apply to such policies regardless.

WAIVER/RELEASE AGREEMENT – Where Firm has a defined group of persons who might be exposed to harm (e.g. participants in an athletic event/program, volunteers) any waiver or release agreement used by Firm whereby such persons (and their parent/guardian as applicable) discharge Firm from claims and liabilities, shall include the City, its elected officials, departments, officers, officials, employees, and volunteers to the same extent as Firm.

Procurement Guidelines To Implement Minority & Small Business Participation

Underutilized WMBE Primes by Industry Category

FORMAL PROCUREMENT	Construction	Construction-Related	Professional	Non-Professional	Goods
	Black	Asian	Black	Black	Black
	Hispanic	Native Am.	Hispanic	Asian	Hispanic
	Native Am.	Woman	Asian	Native Am.	Asian
	Woman		Native Am.		Native Am.
			Woman		Woman

Underutilized WMBE Sub-Contractors / Sub-Consultants

SUB WORK	Construction	Construction-Related	Professional	Non-Professional	Goods
	Black	Black	Black	Black	Black
		Asian	Hispanic	Asian	Asian
		Native Am.	Asian	Native Am.	Native Am.
		Woman	Native Am.		Woman
			Woman		

Policy

The Guidelines apply to formal procurements and solicitations. WMBE participation will be narrowly-tailored.

Index

- Black = Black/African-American Business Enterprise
- Hispanic = Hispanic Business Enterprise
- Asian = Asian Business Enterprise
- Native Am. = Native American Business Enterprise
- Woman = Woman Business Enterprise (Caucasian)

Industry Categories

Construction is defined as: new construction, renovation, restoration, maintenance of public improvements and underground utilities.

Construction-Related Services are defined as: architecture, professional engineering, landscape architecture, design build, construction management services, or registered surveying and mapping.

Professional Services are defined as: attorney, accountant, medical doctor, veterinarian, miscellaneous consultant, etc.

Non-Professional Services are defined as: lawn maintenance, painting, janitorial, printing, hauling, security guard, etc.

Goods are defined as: all supplies, materials, pipes, equipment, machinery, appliances, and other commodities.

MBD Form-70

**FY23 Northwest Ground Storage Tank Improvements
Water Department
FY 23 Project 22-C-00046
SLBE Availability Contact List**

#'s	Business Name	Phone	Fax	Email	Address 1	City	State	Zip	Business Description	FEIN	Cert. Type	Ethnicity
1	Beryl Project Engineering	813-616-3301		info@berylprojectengineering.com	2810 N 10th St	Tampa	FL	33605	Tank Investigation		SLBE	Caucasian
1	Decaro Structural Inc	813-248-8080	813-248-8080	john@decarowillson.com	1725 E 5th Avenue	Tampa	FL	33605	Tank Investigation		SLBE	Caucasian
1	Griner Engineering, Inc.	727-822-2335		joe@grinerengineers.com	3125 Fifth Avenue N, Suite 300	Saint Petersburg	FL	33713	Tank Investigation		SLBE	Caucasian
1	Hough Engineering, Inc.	941-747-4838	941-747-4072	mihough@houghheng.com	1771 Manatee Avenue West	Bradenton	FL	34205	Tank Investigation		SLBE	Caucasian
1	Master Consulting Engineers, Inc.	813-287-3600	813-287-3622	admin@mcengineers.com	5523 W. Cypress St., Suite 200	Tampa	FL	33607	Tank Investigation		SLBE	Hispanic American
1	Otero Engineering, Inc.	813-936-3585		cotero@oteroengineering.com	13902 N. Dale Mabry Hwy., Suite 230	Tampa	FL	33618	Tank Investigation		SLBE	Hispanic American
1	RHC and Associates Inc	813-254-0907	813-254-0744	jrobin19@tamabay.rr.com	P.O. Box 4505	Tampa	FL	33677	Tank Investigation		SLBE	African American
1	Structures Group, Inc. (The)	813-877-3421		officemanager@structuresgroup.com	1714 N Armenia Ave., Suite B	Tampa	FL	33607	Tank Investigation		SLBE	Caucasian
2	Above Electric LLC	813-580-1846	801-894-3084	samantha@aboveelectric.com	207 Tower Dr, Unit A	Oldsmar	FL	34677	Electrical		SLBE	Hispanic American
2	Aguila Electrical Services, Inc.	813-515-6999	813-884-4092	sales@aguilaelectrical.com	5708 N 56TH ST	Tampa	FL	33610	Electrical		SLBE	Hispanic American

**FY23 Northwest Ground Storage Tank Improvements
Water Department
FY 23 Project 22-C-00046
SLBE Availability Contact List**

#'s	Business Name	Phone	Fax	Email	Address 1	City	State	Zip	Business Description	FEIN	Cert. Type	Ethnicity
2	All-In-One Electric, Inc.	813-849-6331	813-514-0473	rjones@aioelectric.com	1201 W. WATERS AVENUE	TAMPA	FL	33604	Electrical		SLBE	African American
2	Crevello Electric, Inc.	813-707-6106	813-707-9633	crevelloelectric@gmail.com	2401 Procchi St	Plant City	FL	33563	Electrical		SLBE	Caucasian
2	Electrical Handyman Services Inc	813-901-8185	813-884-5060	ehs915@aol.com	7046-B West Hillsborough Ave	Tampa	FL	33634	Electrical		SLBE	Hispanic American
2	Green Earth Commercial Contracting Company	813-323-3406		info@gec-3.com	3903 Northdale Blvd. Suite 130W	Tampa	FL	33634	Electrical		SLBE	Hispanic American
2	Harmonics Electric LLC	813-767-7722		hrod@harmonicscselectric.com	14523 Knoll Ridge Dr	Tampa	FL	33625	Electrical		SLBE	Hispanic American
2	Infinity Industrial Controls Inc	727-216-6416	727-286-6240	admin@iicontr ols.com	1057 Cephas Rd.	CLEARWATER	FL	33765	Electrical		SLBE	Caucasian
2	Leading Choice Electric LLC	813-508-7585		leadingchoicel electric@gmail.com	13014 N Dale Mabry Hwy #364	Tampa	FL	33618	Electrical		SLBE	Hispanic American
2	Manatee Electric, Inc.	813-645-7000	813-653-1920	john@reliableelectricusa.com	845 Thompson Rd.	Lithia	FL	33547	Electrical		SLBE	Caucasian
2	One Call Construction Services Inc.	813-270-4105	888-655-0862	occinc@aol.com	6600 32nd Ave. S.	Tampa	FL	33619	Electrical		SLBE	Hispanic American
2	P3 Solutions LLC	813-333-1217	813-600-3709	lpasetti@p3solutions.com	5425 W Crenshaw St, Suite B	Tampa	FL	33634	Electrical		SLBE	Hispanic American

**FY23 Northwest Ground Storage Tank Improvements
Water Department
FY 23 Project 22-C-00046
SLBE Availability Contact List**

#'s	Business Name	Phone	Fax	Email	Address 1	City	State	Zip	Business Description	FEIN	Cert. Type	Ethnicity
2	Reliability Consulting Services, Inc.	813-298-2617	813-645-2272	bwoolbright@reliabilityconsulting.net	748 Kingston Ct.	Apollo Beach	FL	33572	Electrical		SLBE	Caucasian
2	TAMCO Electric, Inc.	813-918-8489	813-986-5979	atrujill@tampabay.rr.com	P.O. Box 579	Seffner	FL	33583	Electrical		SLBE	Hispanic American
4	J. J. Sosa & Associates, Inc.	813-846-3676	813-814-0116	jjsosa@jjsosa.com	PO Box 497	Oldsmar	FL	34677	Disinfection		SLBE	Hispanic American

Instructions Regarding Use of the WMBE/SLBE Availability Contact List

Bidders must solicit a subcontracting bid from ALL of the firms listed on the WMBE/SLBEs list provided within the Specifications, and provide documentation of emails, faxes, phone calls, letters, or other communication with the firms as a first step in demonstrating Good-Faith Efforts to achieve the goal set for WMBE/SLBE participation on this contract.

The list is formatted to facilitate e-mailing of a solicitation to the listed firms by copying and pasting the email addresses.

The WMBE/SLBE participation Goal is based upon the availability of the certified firms indicated on the contact list. The Goal and Requirements of the City's Equal Business Opportunity Program are stated in the Bid/Contract Document, Specifications.

PROPOSAL

To the Mayor and City Council of the City of Tampa, Florida:

Legal Name of Bidder: _____

Bidder's Fictitious Name, *if applicable*: _____

Bidder is a/an: Individual Partnership* Joint Venture* LLC Corp. Other:

Bidder is organized under the laws of: State of Florida Other:

Bidder Mailing Address: _____

Bidder's Federal Employee Identification No. (FEI/EIN): _____

Bidder's License No.: _____ Bidder's FDOS (SUNBIZ) Doc. No.: _____
(See Ch. 489, FS; use entity's, individual's *only* if applicable)

Bidder Contact Name**: _____ Email: _____ Phone: (____) _____

Bidder's own initial application for employment has criminal history screening practices similar in nature to the practices contained in Chapter 12, Article VI, City of Tampa Code (*Responses, whether "Yes" or "No", are for informational purposes only and will not be used as a basis of award or denial, nor as a basis for any protest*): Yes No

The below named person, appearing before the undersigned authority and after being first duly sworn, for him/herself and on behalf of the entity submitting this Proposal does hereby affirm and declare as follows:

- (1) He/She is of lawful age and is authorized to act on behalf of Bidder (the individual, partnership, corporation, entity, etc. submitting this Proposal) and that all statements made in this document are true and correct to the best of my knowledge.
- (2) If Bidder is operating under a fictitious name, Bidder has currently complied with any and all laws and procedures governing the operation of businesses under fictitious names in the State of Florida
- (3) No person or entity other than Bidder has any interest in this Proposal or in the Contract proposed to be entered into.
- (4) This Proposal is made without any understanding, agreement, or connection with any person or entity making Proposal for the same purposes, and is in all respects fair and without collusion or fraud.
- (5) Bidder is not in arrears to the City of Tampa, upon debt or contract, and is not a defaulter, as surety or otherwise, upon any obligation to the City of Tampa.
- (6) That no officer or employee or person whose salary is payable in whole or in part from the City Treasury is, shall be or become interested, directly or indirectly, as a contracting party, partner, stockholder, surety or otherwise, in this Proposal, or in the performance of the Contract, or in the supplies, materials, or equipment and work or labor to which it relates, or in any portion of the profits thereof.
- (7) Bidder has carefully examined and fully understands the Solicitation and has full knowledge of the scope, nature, and quality of the work to be performed; furthermore, Bidder has carefully examined the site of the work and that, from his own investigations, he has satisfied himself as to the nature and location of the work, the character, quality, and quantity of materials and the kinds and extent of equipment and other facilities needed for the performance of the work, the general and local conditions and all difficulties to be encountered, and all other items which may, in any way, affect the work or its performance.
- (8) Bidder (including its principals) has | has NOT been debarred or suspended from contracting with a public entity.
- (9) Bidder has | has NOT implemented a drug-free workplace program that meets the requirements of Section 287.087, Florida Statutes.
- (10) For bids \$1,000,000 and over; The Bidder or its subcontractors participate in an apprenticeship program that is registered with the Florida Department of Education or the United States Department of Labor; or Bidder commits that at the time it executes a construction contract that it or its subcontractors will be participating in such an apprenticeship program or an on-the-job training program; or Bidder has submitted documentation that confirms, to the satisfaction of the City of Tampa, that there are no registered apprenticeship or on-the-job training programs for any work to be performed on the construction project.
- (11) Bidder has carefully examined and fully understands all the component parts of the Contract Documents and agrees Bidder will execute the Contract, provide the required Public Construction Bond, and will fully perform the work in strict accordance with the terms of the Contract and Contract Documents therein referred to for the following prices, to wit:

* If a Partnership or Joint Venture, attach Partnership or Joint Venture Agreement.

** Someone the City may contact with questions/correspondence regarding this Solicitation and/or permits.

Northwest Ground Storage Tank Improvements

Contract: 22-C-00046

Item	Description	Qty	Unit	Unit Price in Words	Unit Price	Cost
1	General Conditions	1	LS			
2	Mobilization/Demobilization	1	LS			
3	Permitting, Bonds, and Insurance	1	LS			
4	Investigation Beneath Tank Floors	1	LS			
5	Repair Concrete Spalls at Base of Interior Tank Walls	30	SQFT			
6	Repair Concrete Spalls on Interior Tank Domes	400	SQFT			
7	Repair Cracks on Interior Tank Dome and Walls	1,200	LF			
8	Repair Cracks on Exterior Tank Dome and Walls	1,200	LF			
9	Repair Concrete Spall on Exterior Tank Dome and Walls	20	SQFT			
10	Repair Wall Manholes	3	EA			
11	Repair Interior Tank Piping	10	EA			
12	Replace Hardware on Dome Access Hatch Cover	1	LS			
13	Repair Cracking on Dome Access Hatch Curb	1	EA			
14	Repair Cracking on Dome Center Vent Curb	1	EA			
15	Repair Concrete Spall on Overflow Opening	1	EA			
16	Tank Disinfection and Testing	2	EA			
17	Prepare Tank Interior Walls, Floor, and Ceiling	39,200	SQFT			
18	First, Second and Third Coat Tank on Interior Walls, Floor and Ceiling	39,200	SQFT			
19	Prime, First and Second Coat Tank Exterior Spot Repairs at Northwest GST	5,260	SQFT			
20	Surface Preparation, Single Top Coat Tank Exterior at Northwest GST	26,300	SQFT			
21	Prepare, Crack Repair, Prime, First & Second, and Finish Coat of Exterior Northwest GST Building and Piping within and outside of the Building	4,500	SQFT			
22	Concrete pad removal and replacement	1	LS			
23	Removal and replacement of 24-inch butterfly valve, installation of new above grade valves and piping	1	LS			
24	Removal of altitude valve and installation of altitude valve	1	LS			
25	Installation of Tank Accessories	1	LS			
26	Electrical	1	LS			
Subtotal						
Contingency						\$128,000
Bid Total						

Item	Bid Alternative Description	Qty	Unit	Unit Price in Words	Unit Price	Cost
B1	Additional Prime, and First Coat Tank Exterior at Northwest GST	26,300	SQFT			
Bid Alternatives Total						
Base Bid Plus Alternatives						

Computed Total Price in Words: _____
 _____ dollars and _____ cents.

Computed Total Price in Figures: \$ _____

Bidder acknowledges that the following addenda have been received and that the changes covered by the addendum(s) have been taken into account in this proposal: #1 ____ #2 ____ #3 ____ #4 ____ #5 ____ #6 ____ #7 ____ #8 ____.

Bidder acknowledges the requirements of the City of Tampa's Equal Business Opportunity Program.

Bidder acknowledges that it is aware of Florida's Trench Safety Act (Sections 553.60-553.64, Florida Statutes), and agrees that Bidder together with any involved subcontractors will comply with all applicable trench safety standards. Bidder further acknowledges that included in the various items of this Proposal and the total bid price (as applicable) are costs for complying with the Trench Safety Act. Bidder further identifies the costs and methods summarized below:

	Trench Safety Measure (Description)	Unit of Measure (LF, SY)	Unit Quantity	Unit Cost	Extended Cost
A.	_____	_____	_____	_____	_____
B.	_____	_____	_____	_____	_____
C.	_____	_____	_____	_____	_____
Total Cost: \$				_____	

Accompanying this Proposal is a certified check, cashier's check or Tampa Bid Bond (form included herein must be used) for at least five percent (5%) of the total amount of the Proposal which check shall become the property of the City, or which bond shall become forthwith due and payable to the City, if this Proposal shall be accepted by the City and the Bidder shall fail to enter into a legally binding contract with and to furnish the required Public Construction Bond to the City within twenty (20) days after the date of its receipt of written Notice of Award by the City so to do.

FAILURE TO COMPLETE THE ABOVE MAY RESULT IN THE PROPOSAL BEING DECLARED NON-RESPONSIVE.

[SEAL] Name of Bidder: _____
 Authorized Signature: _____
 Signer's Printed Name: _____
 Signer's Title: _____

STATE OF _____
 COUNTY OF _____

For an entity: The forgoing instrument was sworn (or affirmed) before me this ____ day of _____, 20____ by _____ as _____ of _____, a/n Partnership Joint Venture LLC Corp Other: _____, on behalf of such entity. Such individual is personally known to me or produced a/n _____ state driver's license as identification.

For an individual: The forgoing instrument was sworn (or affirmed) before me this ____ day of _____, 20____ by _____, who is personally known to me or produced a/n _____ state driver's license as identification.

[NOTARY SEAL] Notary Public, State of _____
 Notary Printed Name: _____
 Commission No.: _____
 My Commission Expires: _____

**Bidder's Statement Regarding
Bidder's Criminal History Screening Practices:**

Pursuant to Sec. 2-284. - Bidder's Criminal History Screening Practices, the bidder declares as follows:

The Bidder hereby declines any discount or incentive related to Section 2-284 Bidder's Criminal History Screening Practices.

The Bidder hereby applies for applicable discount or incentive related to Section 2-284 Bidder's Criminal History Screening Practices. The following documentation and assurances are provided:

___ Notarized past employment analysis that includes the number of disadvantaged workers the bidder has hired in the past, or, if the bidder has never hired a disadvantaged worker, an explanation that the bidder made a good faith effort to hire a disadvantaged worker: and,

___ An estimate of the number of disadvantaged workers that the bidder has hired or plans to hire if the bidder is awarded the project; and,

___ Evidence that the bidder's recruitment literature and employment policy does not include language that is disadvantageous to a disadvantaged worker.

___ Identifies, []hereon []in attached document, potential job opportunities under the project that may be available for disadvantaged workers if the City awards the Bidder the project; and,

___ Agrees to consider for job placement at least one otherwise qualified disadvantaged worker, to the extent a job opportunity is available, if and after the Bidder is awarded the project; or

___ The Bidder currently employs a percentage of disadvantaged workers consistent with industry standards as determined by the director of the soliciting department or designee.

Signed _____

Date _____

Name _____

Title _____

Firm _____

Project _____



Good Faith Effort Compliance Plan Guidelines

for Women/Minority Business Enterprise/Small Local Business Enterprise Participation
City of Tampa - Equal Business Opportunity Program
(MBD Form 50 – detailed instructions on page 2 of 2)

Contract Name _____ Bid Date _____

Bidder/Proposer _____

Signature _____ Date _____

Name _____ Title _____

The Compliance Plan with attachments is a true account of Good Faith Efforts (GFE) made to achieve the participation goals as specified for Women/Minority Business Enterprises/Small Local Business Enterprises (WMBE/SLBE) on the referenced contract:

The WMBE/SLBE participation **Goal is Met or Exceeded**. See DMI Forms 10 and 20 which accurately report all subcontractors solicited and all subcontractors to-be-utilized.

The WMBE/SLBE participation Goal is **Not Achieved**. The following list is an overview of the baseline GFE action steps already performed. Furthermore, it is understood that these GFE requirements are weighted in the compliance evaluation based on the veracity and demonstrable degree of documentation provided with the bid/proposal:

(Check applicable boxes below. Must enclose supporting documents accordingly with remarks)

- (1) Solicited through reasonable and available means the interest of WMBE/SLBEs that have the capability to perform the work of the contract. The Bidder or Proposer must solicit this interest within sufficient time to allow the WMBE/SLBEs to respond. The Bidder or Proposer must take appropriate steps to follow up initial solicitations with interested WMBE/SLBEs. See DMI report forms for subcontractors solicited. See enclosed supplemental data on solicitation efforts. Qualifying Remarks:
- (2) Provided interested WMBE/SLBEs with adequate, specific scope information about the plans, specifications, and requirements of the contract, including addenda, in a timely manner to assist them in responding to the requested-scope identified by bidder/proposer for the solicitation. See enclosed actual solicitations used. Qualifying Remarks:
- (3) Negotiated in good faith with interested WMBE/SLBEs that have submitted bids (e.g. adjusted quantities or scale). Documentation of negotiation must include the names, addresses, and telephone numbers of WMBE/SLBEs that were solicited; the date of each such solicitation; a description of the information provided regarding the plans and specifications for the work selected for subcontracting; and evidence as to why agreements could not be reached with WMBE/SLBEs to perform the work. Additional costs involved in soliciting and using subcontractors is not a sufficient reason for a bidder/proposer's failure to meet goals or achieve participation, as long as such costs are reasonable. Bidders are not required to accept excessive quotes in order to meet the goal. DMI Utilized Forms for sub-(contractor/consultant) reflect genuine negotiations This project is an RFO/RFP in nature and negotiations are limited to clarifications of scope/specifications and qualifications. See enclosed documentation. Qualifying Remarks:
- (4) Not rejecting WMBE/SLBEs as being unqualified without justification based on a thorough investigation of their capabilities. The WMBE/SLBEs standing within its industry, membership in specific groups, organizations / associations and political or social affiliations are not legitimate causes for rejecting or not soliciting bids to meet the goals. Not applicable. See attached justification for rejection of a subcontractor's bid or proposal. Qualifying Remarks:
- (5) Made scope(s) of work available to WMBE/SLBE subcontractors and suppliers; and, segmented portions of the work or material consistent with the available WMBE/SLBE subcontractors and suppliers, so as to facilitate meeting the goal. Sub-Contractors were allowed to bid on their own choice of work or trade without restriction to a pre-determined portion. See enclosed comments. Qualifying Remarks:
- (6) Made good faith efforts, despite the ability or desire of Bidder/Proposer to perform the work of a contract with its own forces/organization. A Bidder/Proposer who desires to self-perform the work of a contract must demonstrate good faith efforts if the goal has not been met. Sub-Contractors were not prohibited from submitting bids/proposals and were solicited on work typically self-performed by the prime. Qualifying Remarks:
- (7) Segmented portions of the work to be performed by WMBE/SLBEs in order to increase the likelihood that the goals will be met. This includes, where appropriate, breaking out contract work items into economically feasible units (quantities/scale) to facilitate WMBE/SLBE participation, even when the Bidder/Proposer might otherwise prefer to perform these work items with its own forces. Sub-Contractors were allowed to bid on their own choice of work or trade without restriction to a pre-determined portion. Sub-Contractors were not prohibited from submitting bids/proposals and were solicited on work typically self-performed by the prime. See enclosed comments. Qualifying Remarks:
- (8) Made efforts to assist interested WMBE/SLBEs in obtaining bonding, lines of credit, or insurance as required by the city or contractor. See enclosed documentation on initiatives undertaken and methods to accomplish. Qualifying Remarks:
- (9) Made efforts to assist interested WMBE/SLBEs in obtaining necessary equipment, supplies, materials, or related assistance or services, including participation in an acceptable mentor-protégé program. See enclosed documentation of initiatives and/or agreements. Qualifying Remarks:
- (10) Effectively used the services of the City and other organizations that provide assistance in the recruitment and placement of WMBE/SLBEs. See enclosed documentation. The following services were used:

Note: Provide any unsolicited information that will support the Bid/RFP Compliance Evaluation. Named Documents Are:



Participation Plan: Guidance for Complying with Good Faith Efforts Outreach
(page 2 of 2)

1. All firms on the WMBE/SLBE Goal Setting List must be solicited and documentation provided for email, fax, letters, phone calls, and other methods of outreach/communication with the listed firms. The DMI Solicited and DMI-Utilized forms must be completed for all firms solicited or utilized. Other opportunities for subcontracting may be explored by consulting the City of Tampa MBD Office and/or researching the on-line Diversity Management Business System Directory for Tampa certified WMBE/SLBE firms.
2. Solicitation of WMBE/SLBEs, via written or electronic notification, should provide specific information on the services needed, where plans can be reviewed and assistance offered in obtaining these, if required. Solicitations should be sent a minimum of a week (i.e. 5 business days or more) before the bid/proposal date. Actual copies of the bidder's solicitation containing their scope specific instructions should be provided.
3. With any quotes received, a follow-up should be made when needed to confirm detail scope of work. For any WMBE/SLBE low quotes rejected, an explanation shall be provided detailing negotiation efforts.
4. If a low bid WMBE/SLBE is rejected or deemed unqualified the contractor must provide an explanation and supporting documentation for this decision.
5. Prime shall break down portions of work into economical feasible opportunities for subcontracting. The WMBE/SLBE directory may be useful in identifying additional subcontracting opportunities and firms not listed in the "WMBE/SLBE Goal Setting Firms List."
6. Contractor shall not preclude WMBE/SLBEs from bidding on any part of work, even if the Contractor may desire to self-perform the work.
7. Contractor shall avoid relying solely on subcontracting out work-scope where WMBE/SLBE availability is not sufficient to attain the pre-determined subcontract goal set for the Bid or when targeted sub-consultant participation is stated within the RFP/RFQ.
8. In its solicitations, the Bidder should offer assistance to WMBE/SLBEs in obtaining bonding, insurance, et cetera, if required of subcontractors by the City or Prime Contractor.
9. In its solicitation, the Bidder should offer assistance in obtaining equipment for a specific job to WMBE/SLBEs, if needed.
10. Contractor should use the services offered by such agencies as the City of Tampa Minority and Small Business Development Office, Hillsborough County Entrepreneur Collaborative Center, Hillsborough County Economic Development Department's MBE/SBE Program and the NAACP Empowerment Center to name a few for the recruitment and placement of WMBEs/SLBEs.



Failure to Complete, Sign and Submit Both Forms 10 & 20 SHALL render the Bid or Proposal Non-Responsive

**Page 1 of 4 – DMI Solicited/Utilized Schedules
 City of Tampa – Schedule of **All Solicited** Sub-(Contractors/Consultants/Suppliers)
 (FORM MBD-10)**

Contract No.: _____ Contract Name: _____
 Company Name: _____ Address: _____
 Federal ID: _____ Phone: _____ Fax: _____ Email: _____

Check applicable box(es). Detailed Instructions for completing this form are on page 2 of 4.

- No Firms were contacted or solicited for this contract.
- No Firms were contacted because: _____
- See attached list of additional Firms solicited and all supplemental information (List must comply to this form)
Note: Form MBD-10 must list ALL subcontractors solicited including Non-minority/small businesses

NIGP Code Categories: Buildings = 909, General = 912, Heavy = 913, Trades = 914, Architects = 906, Engineers & Surveyors = 925, Supplier = 912-77

S = SLBE W=WMBE O = Neither	Company Name Address Phone, Fax, Email	Type of Ownership (F=Female M=Male) BF BM = African Am. HF HM = Hispanic AF AM = Asian Am. NF NM = Native Am. CF CM = Caucasian	Trade or Services NIGP Code (listed above)	Contact Method L=Letter F=Fax E=Email P=Phone	Quote or Response Received Y/N

Failure to Complete, Sign and Submit
 this form with your Bid or Proposal
 Shall render the Bid Non-Responsive
 (Do Not Modify This Form)

It is hereby certified that the information provided is an accurate and true account of contacts and solicitations for sub-contracting opportunities on this contract.

Signed: _____ Name/Title: _____ Date: _____

**Failure to Complete, Sign and Submit Both Forms 10 & 20 SHALL render the Bid or Proposal Non-Responsive
 Forms must be included with Bid / Proposal**



Instructions for completing The Sub-(Contractors/Consultants/ Suppliers) Solicited Form (Form MBD-10)

This form must be submitted with all bids or proposals. All subcontractors (regardless of ownership or size) solicited and subcontractors from whom unsolicited quotations were received must be included on this form. The instructions that follow correspond to the headings on the form required to be completed. Note: Ability or desire to self-perform all work shall not exempt the prime from Good Faith Efforts to achieve participation.

- **Contract No.** This is the number assigned by the City of Tampa for the bid or proposal.
- **Contract Name.** This is the name of the contract assigned by the City of Tampa for the bid or proposal.
- **Contractor Name.** The name of your business and/or doing business as (dba) if applicable.
- **Address.** The physical address of your business.
- **Federal ID.** FIN. A number assigned to your business for tax reporting purposes.
- **Phone.** Telephone number to contact business.
- **Fax.** Fax number for business.
- **Email.** Provide email address for electronic correspondence.
- **No Firms were contacted or solicited for this contract.** Checking the box indicates that a pre-determined Subcontract Goal or Participation Plan Requirement was not set by the City resulting in your business not using subcontractors and will self-perform all work. If during the performance of the contract you employ subcontractors, the City must pre-approve subcontractors. Use of the “Sub-(Contractors/Consultants/Suppliers) Payments” form (MBD Form-30) must be submitted with every pay application and invoice. Note: Certified **SLBE or WMBE firms** bidding as Primes **are not exempt** from outreach and solicitation of subcontractors.
- **No Firms were contacted because.** Provide brief explanation why no firms were contacted or solicited.
- **See attached documents.** Check box, if after you have completed the DMI Form in its entirety, you need more space to list additional firms and/or if you have supplemental information/documentation relating to the form. All DMI data not submitted on the MBD Form-10 must be in the same format and have all requested data from MBD Form-10 included.

The following instructions are for information of any and all subcontractors solicited.

- **“S” = SLBE, “W” = WMBE.** Enter “S” for firms Certified by the City as Small Local Business Enterprises and/or “W” for firms Certified by the City as either Women/Minority Business Enterprise; **“O” = Non-certified others.**
- **Federal ID.** FIN. A number assigned to a business for tax reporting purposes. This information is critical in proper identification and payment of the contractor/subcontractor.
- **Company Name, Address, Phone & Fax.** Provide company information for verification of payments.
- **Type of Ownership.** Indicate the Ethnicity and Gender of the owner of the subcontracting business.
- **Trade, Services, or Materials** indicate the trade, service, or materials provided by the subcontractor. NIGP codes aka “National Institute of Governmental Purchasing” are listed at top section of document.
- **Contact Method L=letter, F=fax, E=Email, P=Phone.** Indicate with letter the method(s) of soliciting for bid.
- **Quote or Resp. (response) Rec’d (received) Y/N.** Indicate “Y” Yes if you received a quotation or if you received a response to your solicitation. Indicate “N” No if you received no response to your solicitation from the subcontractor. Must keep records: log, ledger, documentation, etc. that can validate/verify.

If additional information is required or you have questions, please contact the Equal Business Opportunity Program - Minority and Small Business Development Office at (813) 274-5522.



Failure to Complete, Sign and Submit Both Forms 10 & 20 SHALL render the Bid or Proposal Non-Responsive

Page 3 of 4 – DMI Solicited/Utilized Schedules
City of Tampa – Schedule of All To-Be-Utilized Sub-(Contractors/Consultants/Suppliers)
(FORM MBD-20)

Contract No.: _____ Contract Name: _____
 Company Name: _____ Address: _____
 Federal ID: _____ Phone: _____ Fax: _____ Email: _____

Check applicable box(es). Detailed Instructions for completing this form are on page 4 of 4.

See attached list of additional Firms Utilized and all supplemental information (List must comply to this form)

Note: Form MBD-20 must list ALL subcontractors To-Be-Utilized including Non-minority/small businesses

No Subcontracting/consulting (of any kind) will be performed on this contract.

No Firms are listed to be utilized because: _____

NIGP Code General Categories: Buildings = 909, General = 912, Heavy = 913, Trades = 914, Architects = 906, Engineers & Surveyors = 925, Supplier = 912-77

Enter "S" for firms Certified as Small Local Business Enterprises, "W" for firms Certified as Women/Minority Business Enterprise, "O" for Other Non-Certified

S = SLBE W=WMBE O =Neither	Company Name Address Phone, Fax, Email	Type of Ownership (F=Female M=Male) BF BM = African Am. HF HM = Hispanic Am. AF AM = Asian Am. NF NM = Native Am. CF CM = Caucasian	Trade, Services, or Materials NIGP Code Listed above	\$ Amount of Quote. Letter of Intent (LOI) if available	Percent of Scope or Contract %

Failure to Complete, Sign and Submit
 this form with your Bid or Proposal
 Shall render the Bid Non-Responsive.
 (Do Not Modify This Form)

Total ALL Subcontract / Supplier Utilization \$ _____
 Total SLBE Utilization \$ _____
 Total WMBE Utilization \$ _____
 Percent SLBE Utilization of Total Bid/Proposal Amt. _____% Percent WMBE Utilization of Total Bid/Proposal Amt. _____%

It is hereby certified that the following information is a true and accurate account of utilization for sub-contracting opportunities on this Contract.

Signed: _____ Name/Title: _____ Date: _____

Failure to Complete, Sign and Submit Both Forms 10 & 20 SHALL render the Bid or Proposal Non-Responsive
Forms must be included with Bid / Proposal



Page 4 of 4 DMI – Solicited/**Utilized**

Instructions for completing **The Sub-(Contractors/Consultants/ Suppliers) to be Utilized Form (Form MBD-20)**

This form must be submitted with all bids or proposals. All subcontractors (regardless of ownership or size) projected to be utilized must be included on this form. Note: Ability or desire to self-perform all work shall not exempt the prime from Good Faith Efforts to achieve participation.

Contract No. This is the number assigned by the City of Tampa for the bid or proposal.

- **Contract Name.** This is the name of the contract assigned by the City of Tampa for the bid or proposal.
- **Contractor Name.** The name of your business and/or doing business as (dba) if applicable.
- **Address.** The physical address of your business.
- **Federal ID. FIN.** A number assigned to your business for tax reporting purposes.
- **Phone.** Telephone number to contact business.
- **Fax.** Fax number for business.
- **Email.** Provide email address for electronic correspondence.
- **No Subcontracting/consulting (of any kind) will be performed on this contract.** Checking box indicates your business will not use subcontractors when no Subcontract Goal or Participation Plan Requirement was set by the City, but will self-perform all work. When subcontractors are utilized during the performance of the contract, the “Sub-(Contractors/Consultants/Suppliers) Payments” form (MBD Form-30) must be submitted with every pay application and invoice. Note: certified **SLBE or WMBE firms** bidding as Primes **are not exempt** from outreach and solicitation of subcontractors, including completion and submitting Form-10 and Form-20.
- **No Firms listed To-Be-Utilized.** Check box; provide brief explanation why no firms were retained when a goal or participation plan requirement was set on the contract. Note: mandatory compliance with Good Faith Effort outreach (GFECF) requirements applies (MBD Form-50) and supporting documentation must accompany the bid.
- **See attached documents.** Check box, if after completing the DMI Form in its entirety, you need more space to list additional firms and/or if you have supplemental information/documentation relating to the scope/value/percent utilization of subcontractors. Reproduce copies of MBD-20 and attach. All data not submitted on duplicate forms must be in the same format and content as specified in these instructions.

The following instructions are for information of Any and All subcontractors To Be Utilized.

- **Federal ID. FIN.** A number assigned to a business for tax reporting purposes. This information is critical in proper identification of the subcontractor.
- **“S” = SLBE, “W” = WMBE.** Enter “S” for firms Certified by the City as Small Local Business Enterprises and/or “W” for firms Certified by the City as Women/Minority Business Enterprise; **“O” = Non-certified others.**
- **Company Name, Address, Phone & Fax.** Provide company information for verification of payments.
- **Type of Ownership.** Indicate the Ethnicity and Gender of the owner of the subcontracting business.
- **Trade, Services, or Materials (NIGP code if Known)** Indicate the trade, service, or material provided by the subcontractor. Abbreviated list of NIGP is available at <http://www.tampagov.net/mbd> “Information Resources”.
- **Amount of Quote, Letters of Intent** (required for both SLBEs and WMBEs).
- **Percent of Work/Contract.** Indicate the percent of the total contract price the subcontract(s) represent. For CCNA only (i.e. Consultant A/E Services) you must indicate subcontracts as percent of total scope/contract.
- **Total Subcontract/Supplier Utilization.** – Provide total dollar amount of all subcontractors/suppliers projected to be used for the contract. (Dollar amounts may be optional in CCNA depending on solicitation format).
- **Total SLBE Utilization.** Provide total dollar amount for all projected SLBE subcontractors/Suppliers used for this contract. (Dollar amounts may be optional in CCNA proposals depending on the solicitation format).
- **Total WMBE Utilization.** Provide total dollar amount for all projected WMBE subcontractors/Suppliers used for this contract. (Dollar amounts may be optional in CCNA proposals depending on the solicitation format).
- **Percent SLBE Utilization.** Total amount allocated to SLBEs divided by the total bid/proposal amount.
- **Percent WMBE Utilization.** Total amount allocated to WMBEs divided by the total bid/proposal amount.

If additional information is required or you have questions, please contact the Equal Business Opportunity Program - Minority and Small Business Development Office at (813) 274-5522.

TAMPA BID BOND
Contract 22-C-00046; Northwest Ground Storage Tank Improvements

KNOW ALL MEN BY THESE PRESENTS, that we, _____

(hereinafter called the Principal) and _____

(hereinafter called the Surety) a Corporation chartered and existing under the laws of the State of _____, with its principal offices in the City of _____, and authorized to do business in the State of Florida, are held and firmly bound unto the City of Tampa, a Municipal Corporation of Hillsborough County, Florida, in the full and just sum of 5% of the amount of the (Bid) (Proposal) good and lawful money of the United States of America, to be paid upon demand of the City of Tampa, Florida, to which payment will and truly to be made we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally and firmly these presents.

WHEREAS, the Principal is about to submit, or has submitted to the City of Tampa, Florida, a Proposal for the construction of certain facilities for the City designated Contract 22-C-00046, Northwest Ground Storage Tank Improvements.

WHEREAS, the Principal desires to file this Bond in accordance with law, in lieu of a certified Bidder's check otherwise required to accompany this Proposal.

NOW, THEREFORE: The conditions of this obligation are such that if the Proposal be accepted, the Principal shall, within twenty (20) days after the date of receipt of written Notice of Award, execute a contract in accordance with the Proposal and upon the terms, conditions and price set forth therein, in the form and manner required by the City of Tampa, Florida and execute a sufficient and satisfactory Public Construction Bond payable to the City of Tampa, Florida in an amount of one hundred percent (100%) of the total contract price, in form and with security satisfactory to said City, then this Bid Bond obligation is to be void; otherwise to be and remain in full force and virtue in law, and the Surety shall, upon failure of the Principal to comply with any or all of the foregoing requirements within the time specified above, immediately pay to the aforesaid City, upon demand, the amount thereof, in good and lawful money of the United States of America, not as a penalty, but as liquidated damages.

IN TESTIMONY THEREOF, the Principal and Surety have caused these presents to be duly signed and sealed this _____ day of _____, 20____.

Principal

BY _____

TITLE _____

BY _____

TITLE _____

(SEAL)

Producing Agent

Producing Agent's Address

Name of Agency

The addition of such phrases as "not to exceed" or like import shall render the (Bid) (Proposal) non-responsive.

AGREEMENT

For furnishing all labor, materials and equipment, together with all work incidental thereto, necessary and required for the performance of the work for the construction of Contract 22-C-00046 in accordance with your Proposal dated _____, amounting to a total of \$ _____ as completed in accordance with subsections I-2.09 and I-2.10 of the Instruction to Bidders.

This AGREEMENT, made and entered into in triplicate, between the City of Tampa, Florida, hereinafter called the City, and _____ hereinafter called the Contractor, as of the _____ day of _____, 20__ when the City Council of the City of Tampa, Florida adopted a Resolution authorizing, among other things, the Mayor's execution of this Agreement.

WITNESSETH that, in consideration of the mutual stipulations, agreements, and covenants herein contained, the parties hereto have agreed and hereby agree with each other, the Party of the First Part for itself, its successors and assigns, and the Party of the Second Part for itself, or himself, or themselves, and its successors and assigns, or his or their executors, administrators and assigns, as follows:

Contract 22-C-00046; Northwest Ground Storage Tank Improvements, shall include, but not be limited to, concrete crack repair, concrete wall spalling repair, repair of manholes, access hatch, and associated appurtenances, interior and exterior tank coating and surface preparation, repair of tank interior piping, tank disinfection, installation of fall protection system, general cleanup, start-up and testing with all associated work required for a complete project in accordance with the Contract Documents.

Contract Documents referred to in Article 1.01 of this Agreement also includes this volume, applicable standard drawings, the plans and any provisions referred to whether actually attached or not.

TAMPA AGREEMENT

SECTION 1 GENERAL

ARTICLE 1.01 THE CONTRACT

Except for titles, subtitles, headings, running headlines, and tables of contents (all of which are printed herein merely for convenience), the following, except for such portions thereof as may be specifically excluded, constitute the Contract:

The Notice to Bidders;
The Instructions to Bidders, including Special Instructions and General Instructions;
The Proposal;
The Bid Bond;
The Certification of Nonsegregated Facilities;
The Notice of Award;
The Agreement;
The Performance Bond;
The Notice To Proceed;
The Specifications, including the General Provisions, the Workmanship and Materials, the Specific Provisions or the Contract Items
The Plans;
All Supplementary Drawings Issued after award of the Contract;
All Addenda issued by the City prior to the receipt of proposals;
All provisions required by law to be inserted in this Contract, whether actually inserted or not.

ARTICLE 1.02 DEFINITIONS

The following words and terms, or pronouns used in their stead, shall, wherever they appear in this Contract, be construed as follows, unless different meaning is clear from the context:

(a)"City" shall mean the City of Tampa, Florida, represented by its Mayor and City Council, Party of the First Part, or such other City official as shall be duly empowered to act for the City on matters relating to this Contract.

(b)"Contractor" shall mean the Party of the Second Part hereto, whether corporation, firm or individual, or any combination thereof, and its, their, or his successors, personal representatives, executors, administrators, and assigns, and any person, firm or corporation who or which shall at any time be substituted in the place of the Party of the Second Part under this Contract.

(c)"Engineer" shall mean the Director of the Department or his duly authorized representative.

(d)"Consultant" shall mean the engineering or architectural firm or individual employed by the City to consult with and advise the City in the construction of the project.

(e)"Surety" shall mean any person, firm or corporation that has executed as Surety the Contractor's Performance Bond securing the performance of this Contract.

(f)"The Work" shall mean everything expressly or implied required to be furnished and done by the Contractor under the Contract, and shall include both Contract Work

and Extra Work.

(g)"Contract Work" shall mean everything expressly or implied required to be furnished and done by the Contractor by any one or more of the Contract parts referred to in Article 1.01 hereof, except Extra Work, as hereinafter defined; it being understood that, in case of any inconsistency in or between any part or parts of this Contract, the Engineer shall determine which shall prevail.

(h)"Contract" or "Contract Documents" shall mean each of the various part of the Contract referred to in Article 1.01 hereof, both as a whole and severally.

(i)"Extra Work" shall mean work other than that required either expressly or implied by the contract in its present form.

(j)"Plans" shall mean only those drawings specifically referred to as such in these documents, or in any Addendum. Drawings issued after the execution of the Contract to explain further, or to illustrate, or to show changes in the work, will be known as "Supplementary Drawings" and shall be binding upon the Contractor with the same force as the Plans.

(k)"Specifications" shall mean all of the directions, requirements, and standards of performance applying to the work, as hereinafter detailed and designated as such, or which may be issued in an addendum.

(l)"Addendum or Addenda" shall mean the additional contract provisions issued in writing prior to the receipt of bids.

(m)"Notice" shall mean written notice. Notice shall be served upon the Contractor, either personally or by leaving the said notice at his residence or with any employee found on the work, or addressed to the Contractor at the residence or place of business given in his proposal and deposited in a postpaid wrapper in any post office box regularly maintained by the United States Post Office.

(n)"Project" shall mean the entire improvement package or related work. The "project" may consist of several different, but related, contracts.

(o)"Site" shall mean, and be limited to, the area upon or in which the Contractor's operations are carried on and such other appropriate areas as may be designed as such by the Engineer.

(p)"Subcontractor" shall mean any person, firm, or corporation, other than employees of the Contractor, who or which contracts with the Contractor to furnish, or actually furnishes labor, or labor and materials, or labor and equipment or labor, materials, and equipment at the site.

(q)Whenever in the Contract the words "directed", "required", "permitted", "ordered", "designated", "prescribed", and words of like import are used, they shall imply the direction, requirement, permission, order, designation, or prescription of the Engineer; and "approved", "acceptable", "satisfactory", "in the judgement of", and words of like import shall mean approved by, or acceptable to, or satisfactory to, or in the judgment of the Engineer.

(r)Whenever in the Contract the word "day" is used, it shall mean calendar day.

(s)"Final Acceptance" shall mean acceptance of the

work as evidenced by an official resolution of the City. Such acceptance shall be deemed to have taken place only if and when an approving resolution has been adopted by the City Council. The final acceptance shall be signed only after the City has assured itself by tests, inspection, or otherwise, that all of the provisions of the Contract have been carried out to its satisfaction.

(t)"Eastern Standard Time" shall be construed as the time being observed in the City on the day proposals are received or other documents issued or signed.

SECTION 2 POWERS OF THE CITY'S REPRESENTATIVES

ARTICLE 2.01 THE ENGINEER

It is covenanted and agreed that the Engineer, in addition to those matters elsewhere herein expressly made subject to his determination, direction, or approval, shall have the power, subject to such express provisions and limitations herein contained as are not in conflict herewith, and subject to review by the Mayor and City Council:

(a)To monitor the performance of the work.

(b)To determine the amount, kind, quality, sequence, and location of the work to be paid for hereunder and, when completed, to measure such work for payment.

(c)To determine all questions of an engineering character in relation to the work, to interpret the Plans, Specifications and Addenda.

(d)To determine how the work of this Contract shall be coordinated with the work of other contractors engaged simultaneously on this project.

(e)To make minor changes in the work as he deems necessary, provided such changes do not result in a net increase in the cost to the City or to the Contractor of the work to be done under the Contract.

(f)To amplify the Plans, add explanatory information and furnish additional Specifications and Drawings consistent with the intent of the Contract Documents.

The power of the Engineer shall not be limited to the foregoing enumeration, for it is the intent of this Contract that all of the work shall be subject to his determinations and approval, except where the determination or approval of someone other than the Engineer is expressly called for herein and except as subject to review by the Mayor and City Council. All orders of the Engineer requiring the Contractor to perform work as Contract work shall be promptly obeyed by the Contractor.

The Engineer shall not, however, have the power to issue an extra work order, and the performance of such work on the order of the Engineer without previously obtaining written confirmation thereof from the Mayor in accordance with Article 7.02 hereof may constitute a waiver of any right to extra compensation therefor. The Contractor is warned that the Engineer has no power to change the terms and provisions of this Contract, except minor changes where such change results in no net increase in the Contract Price.

ARTICLE 2.02 DIRECTOR

The Director of the Department in addition to those matters

expressly made subject to his determination, direction or approval in his capacity as "Engineer", shall also have the power:

(a)To review any and all questions in relation to this Contract and its performance, except as herein otherwise specifically provided, and his determination upon such review shall be final and conclusive upon the Contractor.

(b)With the approval of the Mayor and City Council to authorize modifications or changes in the Contract so as to require: (1) the performance of extra work, or (2) the omission of Contract work whenever he deems it in the interest of the City to do so, or both.

(c)To suspend the whole or any part of the work whenever, in his judgment, such suspension is required: (1) in the interest of the City generally, or (2) to coordinate the work of the various Contractors engaged on this project, or (3) to expedite the completion of the entire project, even though the completion of this particular Contract may be thereby delayed, without compensation to the Contractor for such suspension other than extending the time for the completion of the work, as much as it may have been, in the opinion of the City, delayed by such a suspension.

(d)If, before the final acceptance of all the work contemplated herein, it shall be deemed necessary to take over, use, occupy, or operate any part of the completed or partly completed work, the Engineer shall have the right to do so and the Contractor will not, in any way, interfere with or object to the use, occupation, or operation of such work by the City after receipt of notice in writing from the Engineer that such work or part thereof will be used by the City on and after the date specified in such notice. Such taking over, use, occupancy or operation of any part of the completed or partially completed work shall not constitute final acceptance or approval of any such part of the work.

ARTICLE 2.03 NO ESTOPPEL

The City shall not, nor shall any department, officer, agent, or employee thereof, be bound, precluded, or estopped by any determination, decision, acceptance, return, certificate, or payment made or given under or in connection with this Contract by any officer, agent or employee of the City at any time either before or after final completion and acceptance of the work and payment therefor: (a) from showing the true and correct classification, amount, quality, or character of the work done, or that any determination, decision, acceptance, return certificate or payment is untrue, incorrect or improperly made in any particular, or that the work or any part thereof does not in fact conform to the requirements of the Contract Documents, and (b) from demanding and recovering from the Contractor any overpayments made to him or such damages as it may sustain by reason his failure to comply with the requirements of the Contract of Documents, or both.

ARTICLE 2.04 NO WAIVER OF RIGHTS

Neither the inspection, nor any order, measurements or certificate of the City or its employees, officers, or agents, nor by any order of the City for payment of money, nor any money, nor payments for or acceptance of the whole or any part of the work by the City, nor any extension of time, nor any changes in the Contract, Specifications or Plans, nor any possession by the City or its employees shall operate as a

waiver of any provisions of this Contract, nor any power herein provided nor shall any waiver of any breach of this Contract be held as a waiver of any other subsequent breach.

Any remedy provided in this Contract shall be taken and construed as cumulative, namely, in addition to each and every other suit, action, or legal proceeding. The City shall be entitled as of right to an injunction against any breach of the provisions of this Contract.

SECTION 3 PERFORMANCE OF WORK

ARTICLE 3.01 CONTRACTOR'S RESPONSIBILITY

The Contractor shall do all the work and furnish, at his own cost and expense, all labor, materials, equipment, and other facilities, except as herein otherwise provided, as may be necessary and proper for performing and completing the work under this Contract. The Contractor shall be responsible for the entire work until completed and finally accepted by the City.

The work shall be performed in accordance with the true intent and meaning of the Contract Documents. Unless otherwise expressly provided, the work must be performed in accordance with the best modern practice, with materials as specified and workmanship of the highest quality, all as determined by and entirely to the satisfaction of the Engineer.

Unless otherwise expressly provided, the means and methods of construction shall be such as the Contractor may choose, subject, however, to the approval of the Engineer. Only adequate and safe procedure, methods, structures and equipment shall be used. The Engineer's approval or the Engineer's failure to exercise his right thereon shall not relieve the Contractor of obligations to accomplish the result intended by the Contract, nor shall such create a cause of action for damages.

ARTICLE 3.02 COMPLIANCE WITH LAWS

The Contractor must comply with all local, State and Federal laws, rules, ordinances and regulations applicable to this Contract and to the work done hereunder, and must obtain, at his own expense, all permits, licenses or other authorization necessary for the prosecution of the work.

No work shall be performed under this Contract on Sundays, legal holidays or after regular working hours without the express permission of the Engineer. Where such permission is granted, the Engineer may require that such work be performed without additional expense to the City.

ARTICLE 3.03 INSPECTION

During the progress of the work and up to the date of final acceptance, the Contractor shall, at all times, afford the representatives of the City, the Florida Department of Environmental Regulation, and if applicable, the Federal Environmental Protection Agency and the Federal Department of Labor every reasonable, safe and proper facility for inspecting the work done or being done at the

site. The inspection of any work shall not relieve the Contractor of any of his obligations to perform proper and satisfactory work as herein specified. Finished or unfinished work found not to be in strict accordance with the Contract shall be replaced as directed by the Engineer, even though such work may have been previously approved and payment made therefor.

The City shall have the right to reject materials and workmanship which are defective or require their correction. Rejected work and materials must be promptly removed from the site, which must at all times be kept in a reasonably clean and neat condition.

Failure or neglect on the part of the City to condemn or reject bad or inferior work or materials shall not be construed to imply an acceptance of such work or materials, if it becomes evident at any time prior to the final acceptance of the work by the City. Neither shall it be construed as barring the City at any subsequent time from the recovery of damages of such a sum of money as may be needed to build anew all portions of the work in which inferior work or improper materials were used, wherever found.

Should it be considered necessary or advisable by the City at any time before final acceptance of the entire work to make examinations of work already completed, by removing or tearing out all or portions of such work, the Contractor shall, on request, promptly furnish all necessary facilities, labor, and material for that purpose. If such work is found to be defective in any material respect, due to the fault of the Contractor or his subcontractors, he shall defray all expenses of such examination and of satisfactory reconstruction. If, however, such work is found to meet the requirements of the Contract, the cost of examination and restoration of the work shall be considered an item of extra work to be paid for in accordance with the provisions of Article 7.02 hereof.

ARTICLE 3.04 PROTECTION

During performance and until final acceptance, the Contractor shall be under an absolute obligation to protect the finished and unfinished work against any damage, loss, or injury. The Contractor shall take proper precaution to protect the finished work from loss or damage, pending completion and the final acceptance of all the work included in the entire Contract, provided that such precaution shall not relieve the Contractor from any and all liability and responsibility for loss or damage to the work occurring before final acceptance by the City. Such loss or damage shall be at the risk of and borne by the Contractor, whether arising from acts or omissions of the Contractor or others. In the event of any such loss or damage, the Contractor shall forthwith repair, replace, and make good the work without extension of time therefor, except as may be otherwise provided herein.

The provisions of this Article shall not be deemed to create any new right of action in favor of third parties against the Contractor or the City.

ARTICLE 3.05 PRESERVATION OF PROPERTY

The Contractor shall preserve from damage all property along the line of the work, or which is in the vicinity of or is in anywise affected by the work, the removal or destruction of which is not called for by the Plans. This applies, but is not limited, to the public utilities, trees, lawn areas, building monuments, fences, pipe and underground structures, public streets (except natural wear and tear of streets resulting from legitimate use thereof by the Contractor), and wherever such property is damaged due to the activities of the Contractor, it shall be immediately restored to its original condition by the Contractor and at his own expense.

In case of failure on the part of the Contractor to restore such property, or make good such damage or injury, the City may, upon forty-eight (48) hour written notice, proceed to repair, rebuild, or otherwise restore such property as may be deemed necessary, and the cost thereof will be deducted from any monies due or which may become due the Contractor under this Contract. Nothing in this clause shall prevent the Contractor from receiving proper compensation for the removal, damage, or replacement of any public or private property not shown on the Plans, when this is made necessary by alteration of grade or alignment authorized by the Engineer, provided that such property has not been damaged through fault of the Contractor, his employees or agents.

ARTICLE 3.06 BOUNDARIES

The Contractor shall confine his equipment, apparatus, the storage of materials, supplies and apparatus of his workmen to the limits indicated on the plans, by law, ordinances, permits or direction of the Engineer.

ARTICLE 3.07 SAFETY AND HEALTH REGULATIONS

The Contractor shall comply with the Department of Labor Safety and Health Regulations for construction promulgated under the Occupational Safety and Health Act of 1970 (PL 91- 596) and under Section 107 of the Contract Work Hours and Safety Standards Act (PL91-54).

ARTICLE 3.08 TAXES

All taxes of any kind and character payable on account of the work done and materials furnished under this Contract shall be paid by the Contractor and shall be deemed to have been included in his bid. The laws of the State of Florida provide that sales and use taxes are payable by the Contractor upon the tangible personal property incorporated in the work and such taxes shall be paid by the Contractor and shall be deemed to have been included in his bid.

ARTICLE 3.09 ENVIRONMENTAL CONSIDERATIONS

The Contractor, in the performance of the work under this Contract, shall comply with all Local, State and Federal laws, statutes, ordinances, rules and regulations applicable to protection of the environment; and, in the event he violates any of the provisions of same, he shall be answerable to the Local, State and Federal agencies designated by law to protect the environment. In the event the City receives, from any of the environmental agencies, a citation which is occasioned by an act or omission of the Contractor or his

subcontractor or any officers, employees or agents of either, it is understood and agreed that the Contractor shall automatically become a party-respondent under said citation; and the City immediately shall notify the Contractor and provide him with a copy of said citation.

The Contractor shall comply with the requirements of the citation and correct the offending condition(s) within the time stated in said citation and further shall be held fully responsible for all fines and/or penalties.

**SECTION 4
TIME PROVISIONS**

ARTICLE 4.01 TIME OF START AND COMPLETION

The Contractor must commence work within thirty (30) days subsequent to the date of the receipt of the "Notice to Proceed" by the City unless otherwise provided in the Specific Provisions and Special Instructions. Time being of the essence of this Contract, the Contractor shall thereafter prosecute the work diligently, using such means and methods of construction as well as secure its full completion in accordance with the requirements of the Contract Documents no later than the date specified therefor, or on the date to which the time for completion may be extended.

The Contractor must complete the work covered by this Contract in the number of consecutive calendar days set forth in the Instructions to Bidders, unless the date of completion is extended pursuant to the provisions of Article 4.05 hereof.

The period for performance shall start from the date of signing of this Agreement by the City.

The actual date of completion will be established after a final inspection as provided in Article 4.07 hereof.

ARTICLE 4.02 PROGRESS SCHEDULE

To enable the work to be laid out and prosecuted in an orderly and expeditious manner, the Contractor shall submit to the Engineer a proposed progress schedule within fifteen (15) days after the award of this Contract.

The schedule shall state the Contract starting date, time for completion and date of completion and shall show the anticipated time of starting and completion of each of the various operations to be performed under this Contract, together with all necessary and appropriate information regarding sequence and correlation of work and an estimated time required for the delivery of all materials and equipment required for the work. The proposed schedule shall be revised as directed by the Engineer until finally approved by him, and, after such approval, shall be strictly adhered to by the Contractor. The approved progress schedule may be changed only with the written permission of the Engineer.

If the Contractor shall fail to adhere to the approved progress schedule or the schedule as revised, he shall promptly adopt such other or additional means and methods of construction as will make up for the time lost, and will assure completion in accordance with the contract time.

ARTICLE 4.03 APPROVAL REQUESTS

From time to time, as the work progresses and in the sequence indicated by the approved schedule, the Contractor must submit to the Engineer a specific request, in writing, for each item of information or approval required of him by the Contract. These requests must be submitted sufficiently in advance of the date upon which the information or approval is actually required by the Contractor to allow for the time the Engineer may take to act upon such submissions or resubmissions. The Contractor shall not have any right to an extension of time on account of delays due to his failure to submit his requests for the required information or the required approval in accordance with these requirements.

ARTICLE 4.04 COORDINATION WITH OTHER CONTRACTORS

During progress of the work, other Contractors may be engaged in performing other work on this project or on other projects on the site. In that event, the Contractor shall coordinate the work to be done hereunder with the work of such other Contractors in such manner as the Engineer may direct.

ARTICLE 4.05 EXTENSION OF TIME

If such an application is made, the Contractor shall be entitled to an extension of time for delay in completion of the work should the Contractor be obstructed or delayed in the commencement, prosecution or completion of any part of said work by any act or delay of the City, or by acts or omissions of other Contractors on this project, or by a riot, insurrection, war, pestilence, acts of public authorities, fire, lightning, hurricanes, earthquakes, tornadoes, floods, extremely abnormal and excessive inclement weather as indicated by the records of the local weather bureau for a five-year period preceding the date of the Contract, or by strikes, or other causes, which causes of delay mentioned in this Article, in the opinion of the City, are entirely beyond the expectation and control of the Contractor.

The Contractor shall, however, be entitled to an extension of time for such causes only for the number of days of delay which the City may determine to be due solely to such causes and only to the extent that such occurrences actually delay the completion of the project and then only if the Contractor shall have strictly complied with all of the requirements of Articles 4.01, 4.02, 4.03 and 4.04 hereof. It is hereby understood that the determination by the Engineer as to the order and sequence of the work shall not in itself constitute a basis for extension of time.

The determination made by the City on an application for an extension of time shall be binding and conclusive on the Contractor.

Delays caused by failure of the Contractor's materialmen, manufacturers, and dealers to furnish approved working drawings, materials, fixtures, equipment, appliances, or other fittings on time or failure of subcontractors to perform their work shall not constitute a basis of extension of time.

The Contractor agrees to make no claim for damages for delay in the performance of this Contract occasioned by any

act or omission to act of the City or any of its representatives or because of any injunction which may be brought against the City or its representatives and agrees that any such claim shall be fully compensated for by an extension of time to complete performance of the work as provided herein.

ARTICLE 4.06 LIQUIDATED DAMAGES

It is mutually agreed between the parties that time is the essence of this Contract and that there will be on the part of the City considerable monetary damage in the event the Contractor should fail to complete the work within the time fixed for completion in the Contract or within the time to which such completion may have been extended.

The amount per day set forth in the Instructions to Bidders is hereby agreed upon as the liquidated damages for each and every calendar day that the time consumed in completing the work under this Contract exceeds the time allowed.

This amount shall, in no event, be considered as a penalty or otherwise than as the liquidated and adjusted damages to the City because of the delay and the Contractor and his Surety agree that the stated sum per day for each such day of delay shall be deducted and retained out of the monies which may become due hereunder and if not so deductible, the Contractor and his Surety shall be liable therefor.

ARTICLE 4.07 FINAL INSPECTION

When the work has been completed in accordance with the requirements of the Contract and final cleaning up performed, a date for final inspection of the work by the Engineer shall be set by the Contractor in a written request therefor, which date shall be not less than ten (10) days after the date of such request. The work will be deemed complete as of the date so set by the Contractor if, upon such inspection, the Engineer determines that no further work remains to be done at the site.

If such inspection reveals interms of work still to be performed, however, the Contractor shall promptly perform them and then request a reinspection. If, upon such inspection, the Engineer determines that the work is complete, the date of final completion shall be deemed to be the last day of such reinspection.

**SECTION 5
SUBCONTRACTS AND ASSIGNMENTS**

ARTICLE 5.01 LIMITATIONS AND CONSENT

The Contractor shall not assign, transfer, convey, sublet or otherwise dispose of this Contract or of his right, title, or interest therein, or his power to execute such Contract, or to assign any monies due or to become due thereunder to any other person, firm or corporation unless the previous written consent of the City shall first be obtained thereto and the giving of any such consent to a particular subcontract or assignment shall not dispense with the necessity of such consent to any further or other assignment.

Before making any subcontract, the Contractor must submit a

written statement to the Engineer, giving the name and address of the proposed contractor, the portion of the work and materials which he is to perform and furnish and any other information tending to prove that the proposed subcontractor has the necessary facilities, skill, integrity, past experience and financial resources to perform the work in accordance with the terms and conditions of this Contract.

If the City finds that the proposed subcontractor is qualified, the Contractor will be notified in writing. The City may revoke approval of any subcontractor when such subcontractor evidences an unwillingness or inability to perform his work in strict accordance with these Contract Documents. Notice of such revocation of approval will be given in writing to the Contractor.

The Contractor will promptly, upon request, file with the City a conformed copy of the subcontract. The Contractor shall cause appropriate provisions to be inserted in all subcontracts relative to the work to bind subcontractors to the Contractor by the terms of these Contract Documents, insofar as applicable to the work of subcontractors, and to give the Contractor the same power as regards terminating any subcontracts that the City may exercise over the Contractor under provisions of these Contract Documents.

The Contractor shall be required to perform with his own forces at least twenty-five (25) percent of the work, unless written consent to subcontract a greater percentage of the work is first obtained from the City.

ARTICLE 5.02 RESPONSIBILITY

The approval by the City of a subcontractor shall not relieve the Contractor of any of his responsibilities, duties, and liabilities hereunder. The Contractor shall be solely responsible to the City for the acts or defaults or omissions of his subcontractor and of such subcontractor's officers, agents, and employees, each of whom shall for all purposes be deemed to be the agent or employee of the Contractor. Nothing contained in the Contract Documents shall create any contractual relationship between any subcontractor and the City.

SECTION 6 SECURITY AND GUARANTY

ARTICLE 6.01 CONTRACT SECURITY

The Contractor shall execute and deliver to the City a Performance Bond on the form as provided herein, in an amount at least equal to one hundred (100) percent of the full Contract price, such Bond to be executed by a surety company acceptable to the City. The surety on such Performance Bond shall be a surety company duly authorized to do business in the State of Florida, and the Bond shall be issued or countersigned by a local resident producing agent of such surety company who is a resident of the State of Florida, regularly commissioned and licensed in said State, and satisfactory evidence of the authority of the person or persons executing such Bond shall be submitted with the Bond. The Performance Bond shall serve as security for the faithful performance of this Contract, including

maintenance and guaranty provisions, and for the payment of all persons performing labor and furnishing materials in connection with the Contract. The premiums on the Performance Bond shall be paid by the Contractor.

If, at any time, the City shall become dissatisfied with any surety or sureties then upon the Performance Bond, or if for any other reason such bond shall cease to be adequate security for the City, the Contractor shall, within five days after notice so to do, substitute an acceptable Bond in such form and sum and signed by such other sureties as may be satisfactory to the City. The premiums on such Bond shall be paid by the Contractor. No further partial payments shall be deemed due or shall be made until the new sureties have qualified.

ARTICLE 6.02 CONTRACTORS INSURANCE

Insurance required shall be as indicated on Special Instructions pages beginning with "INS-1"

ARTICLE 6.03 AGAINST CLAIMS AND LIENS

The City may withhold from the Contractor as much as any approved payments to him as may, in the opinion of the City, be necessary to secure (a) just claims of any persons supplying labor or materials to the Contractor or any of his subcontractors for the work then due and unpaid; (b) loss due to defective work not remedied, or (c) liability, damage, or loss due to injury to persons or damages to the work or property of other contractors, subcontractors, or others, caused by the act or neglect of the Contractor or of any of his subcontractors. The City shall have the right, as agent for the Contractor, to apply any such amounts so withheld in such manner as the City may deem proper to satisfy such claims or to secure such protection. Such application of such money shall be deemed payments for the account of the Contractor.

ARTICLE 6.04 MAINTENANCE AND GUARANTY

The Contractor hereby guarantees all the work furnished under this Contract against any defects in workmanship and materials for a period of one year following the date of final acceptance of the work by the City. Under this guarantee, the Contractor hereby agrees to make good, without delay, at his own expense, any failure of any part of the work due to faulty materials or manufacture, construction, or installation, or the failure of any equipment to perform satisfactorily all the work put upon it within the limits of the Contract Documents, and further, shall make good any damage to any part of the work caused by such failure. It is hereby agreed that the Performance Bond shall fully cover all guarantees contained in this Article.

It is also agreed that all warranties, expressed or implied, inure to the benefit of the City and are enforceable by the City.

SECTION 7 CHANGES

ARTICLE 7.01 MINOR CHANGES

The City reserves the right to make such additions, deductions, or changes to this Contract from time to time as

it deems necessary and in a manner not materially affecting the substance thereof or materially changing the price to be paid in order to carry out and complete more fully and perfectly the work herein agreed to be done and performed. This Contract shall in no way be invalidated by any such additions, deductions, or changes, and no claim by the Contractor shall be made for any loss of anticipated profits thereby.

Construction conditions may require that minor changes be made in the location and installation of the work and equipment to be furnished and other work to be performed hereunder, and the Contractor when ordered by the Engineer, shall make such adjustments and changes in said locations and work as may be necessary, without additional cost to the City, provided such adjustments and changes do not alter the character, quantity of cost of the work as a whole, and provided further that Plans and Specifications showing such adjustments and changes are furnished to the Contractor by the City within a reasonable time before any work involving such adjustment and changes is begun. The Engineer shall be the sole judge of what constitutes a minor change for which no additional compensation shall be allowed.

ARTICLE 7.02 EXTRA WORK

The City may at any time by a written order and without notice to the sureties require the performance of such extra work as it may find necessary or desirable. An order for extra work shall be valid only if issued in writing and signed by the Mayor and the work so ordered must be performed by the Contractor.

The amount of compensation to be paid to the Contractor for any extra work as so ordered shall be determined as follows:

(a) By such applicable unit prices, if any, as are set forth in the Proposal; or

(b) If no such unit prices are set forth then by a lump sum or other unit prices mutually agreed upon by the City and the Contractor; or

(c) If no such unit prices are set forth in the Proposal and if the parties cannot agree upon a lump sum or other unit prices then by the actual net cost in money to the Contractor of the extra work performed, which cost shall be determined as follows:

(1) For all labor and foreman in direct charge of the authorized operations, the Contractor shall receive the current local rate of wages to be agreed upon, in writing, before starting such work for each hour that said labor and foremen are actually engaged thereon, to which shall be added an amount equal to 25 percent of the sum thereof which shall be considered and accepted as full compensation for general supervision, FICA taxes, contributions under the Florida Unemployment Compensation Act, insurance, bond, subcontractor's profit and overhead, the furnishing of small tools and miscellaneous equipment used, such as picks, shovels, hand pumps, and similar items.

(2) For all materials used, the Contractor shall receive the actual cost of such materials delivered at the site or previously approved delivery point as established by original receipted bills. No percentage shall be added to this cost.

(3) For special equipment and machinery such as power-driven pumps, concrete mixers, trucks, and tractors, or other equipment, required for the economical performance of the authorized work, the Contractor shall receive payment based on the average local area rental price for each item of equipment and the actual time of its use on the work. No percentage shall be added to this sum.

(4) Records of extra work done under this procedure shall be reviewed at the end of each day by the Contractor or his representative and the Engineer. Duplicate copies of accepted records shall be made and signed by both Contractor or his representative and the Engineer, and one copy retained by each.

Request for payment for approved and duly authorized extra work shall be submitted in the same form as Contract work or in the case of work performed under paragraph (c) (1) above upon a certified statement supported by receipted bills. Such statement shall be submitted for the current Contract payment for the month in which the work was done.

ARTICLE 7.03 DISPUTED WORK

If the Contractor is of the opinion that any work required, necessitated, or ordered violates the terms and provisions of this Contract, he must promptly notify the Engineer, in writing, of his contentions with respect thereto and request a final determination thereof. If the Engineer determines that the work in question is Contract work and not extra work or that the order complained of is proper, he will direct the Contractor to proceed and the Contractor shall promptly comply. In order, however, to reserve his right to claim compensation for such work or damages resulting from such compliance, the Contractor must, within five (5) days after receiving notice of the Engineer's determination and direction, notify the City in writing that the work is being performed or that the determination and direction is being complied with under protest. Failure of the Contractor to notify shall be deemed as a waiver of claim for extra compensation or damages therefor.

Before final acceptance by the City, all matters of dispute must be adjusted to the mutual satisfaction of the parties thereto. Final determinations and decisions, in case any questions shall arise, shall constitute a condition precedent to the right of the Contractor to receive the money therefor until the matter in question has been adjusted.

ARTICLE 7.04 OMITTED WORK

The City may at any time by a written order and without notice to the sureties require the omission of such Contract work as it may find necessary or desirable.

An order for omission of work shall be valid only if signed by the Mayor and the work so ordered must be omitted by the Contractor. The amount by which the Contract price shall be reduced shall be determined as follows:

(a) By such applicable unit prices, if any, as are set forth in the Contract; or

(b) By the appropriate lump sum price set forth in the Contract; or

(c) By the fair and reasonable estimated cost to the City

of such omitted work as determined by the Engineer and approved by the City.

SECTION 8 CONTRACTOR'S EMPLOYEES

ARTICLE 8.01 CHARACTER AND COMPETENCY

The Contractor and his subcontractors shall employ upon all parts of the work herein contracted for only competent, skillful, and trustworthy workers. Should the Engineer at any time give notice, in writing, to the Contractor or his duly authorized representative on the work that any employee in his opinion is incompetent, unfaithful, disorderly, careless, unobservant of instructions, or in any way a detriment to the satisfactory progress of the work, such employee shall immediately be dismissed and not again allowed upon the site.

ARTICLE 8.02 SUPERINTENDENCE

The Contractor shall give his personal supervision to the faithful prosecution of the work and in case of his absence shall have a competent, experienced, and reliable supervisor or superintendent, acceptable to the Engineer on the site who shall follow without delay all instructions of the Engineer in the prosecution and completion of the work and every part thereof, in full authority to supply workers, material, and equipment immediately. He shall keep on hand at all times copies of the Contract Documents.

ARTICLE 8.03 EMPLOYMENT OPPORTUNITIES

The Contractor shall, in the performance of the work required to be done under this Contract, employ all workers without discrimination regarding race, creed, color, sex or national origin and must not maintain or provide facilities that are segregated on the basis of race, color, creed or national origin.

ARTICLE 8.04 RATES OF WAGES

On federally assisted projects, the rates of wages to be paid under this Contract shall not be less than the rates of wages set forth in Section 12 of this Agreement.

On other projects, no wage rate determination is included. Florida's Prevailing Wage Law (Section 215.19, Florida Statutes) was repealed effective April 25, 1979.

ARTICLE 8.05 PAYROLL REPORTS

The Contractor and each subcontractor shall, if requested to do so, furnish to the Engineer a duly certified copy of his payroll and also any other information required by the Engineer to satisfy him that the provisions of the law as to the hours of employment and rate of wages are being observed.

Payrolls shall be prepared in accordance with instructions furnished by the City and on approved forms. The Contractor shall not carry on his payroll any persons not employed by him. Subcontractor's employees shall be carried only on the payrolls of the employing subcontractor.

SECTION 9 CONTRACTOR'S DEFAULT

ARTICLE 9.01 CITY'S RIGHT AND NOTICE

It is mutually agreed that: (a) if the Contractor fails to begin work when required to do so, or (b) if at any time during the progress of the work it shall appear to the Engineer that the Contractor is not prosecuting the work with reasonable speed, or is delaying the work unreasonably and unnecessarily, or (c) if the force of workmen or quality or quantity of material furnished are not sufficient to insure completion of the work within the specified time and in accordance with the Specifications hereto attached, or (d) if the Contractor shall fail to make prompt payments for materials or labor or to subcontractors for work performed under the Contract, or (e) if legal proceedings have been instituted by others than the City in such manner as to interfere with the progress of the work and may subject the City to peril of litigation or outside claims of (f) if the Contractor shall be adjudged a bankrupt or make an assignment for the benefit of creditors, or (g) if in any proceeding instituted by or against the Contractor an order shall be made or entered granting an extension of time of payment, composition, adjustment, modification, settlement or satisfaction of his debts or liabilities, or (h) if a receiver or trustee shall be appointed for the Contractor or the Contractor's property, or (i) if the Contract or any part thereof shall be sublet without the consent of the City being first obtained in writing, or (j) if this Contract or any right, monies, or claim thereunder shall be assigned by the Contractor, otherwise than as herein specified, or (k) if the Contractor shall fail in any manner of substance to observe the provisions of this Contract, or (l) if any of the work, machinery, or equipment shall be defective, and shall not be replaced as herein provided, or (m) if the work to be done under this Contract shall be abandoned, then such fact or conditions shall be certified by the Engineer and thereupon the City without prejudice to any other rights or remedies of the City, shall have the right to declare the Contractor in default and so notify the Contractor by a written notice, setting forth the ground or grounds upon which such default is declared and the Contractor must discontinue the work, either as a portion of the work or the whole thereof, as directed.

ARTICLE 9.02 CONTRACTOR'S DUTY UPON DEFAULT

Upon receipt of notice that his Contract is in default, the Contractor shall immediately discontinue all further operations on the work or such part thereof, and shall immediately quit the site or such part thereof, leaving untouched all plant, materials, equipment, tools, and supplies.

ARTICLE 9.03 COMPLETION OF DEFAULTED WORK

The City, after declaring the Contractor in default, may then have the work completed or the defective equipment or machinery replaced or anything else done to complete the work in strict accordance with the Contract Documents by such means and in such manner, by Contract with or without public letting, or otherwise, as it may deem advisable,

utilizing for such purpose without additional cost to the City such of the Contractor's plant, materials, equipment, tools, and supplies remaining on the site, and also such subcontractors as it may deem advisable.

The City shall reimburse all parties, including itself, for the expense of such completion, including liquidated damages, if any, and the cost of reletting. The City shall deduct this expense from monies due or to become due to the Contractor under this Contract, or any part thereof, and in case such expense is more than the sum remaining unpaid of the original contract price, the Contractor and his sureties shall pay the amount of such deficiency to the City.

ARTICLE 9.04 PARTIAL DEFAULT

In case the City shall declare the Contractor in default as to a part of the work only, the Contractor shall discontinue such part, shall continue performing the remainder of the work in strict conformity with the terms of the Contract, and shall in no way hinder or interfere with any other contractor or person whom the City may engage to complete the work as to which the Contractor was declared in default.

SECTION 10 PAYMENTS

ARTICLE 10.01 PRICES

For the Contractor's complete performance of the work, the City will pay and the Contractor agrees to accept, subject to the terms and conditions hereof, the lump sum prices or unit prices in the Contractor's Proposal and the award made therein, plus the amount required to be paid for any extra work ordered under Article 7.02 hereof, less credit for any work omitted pursuant to Article 7.04 hereof. Under unit price items, the number of units actually required to complete the work under the Contract may be more than stated in the Proposal. The Contractor agrees that no claim will be made for any damages or for loss of profits because of a difference between the quantities of the various classes of work assumed and stated in the Proposal Form as a basis for comparing Proposals and the quantities of work actually performed.

The sum as awarded for any lump sum Contract or lump sum Contract Item shall represent payment in full for all of the various classes of work, including materials, equipment, and labor necessary or required to complete, in conformity with the Contract Document, the entire work shown, indicated or specified under the lump sum Contract or lump sum Contract Item.

The amount as awarded as a unit price for any unit price Contract Item shall represent payment in full for all the materials, equipment, and labor necessary to complete, in conformity with the Contract Documents, each unit of work shown, specified, or required under the said unit price Contract Item.

No payment other than the amount as awarded will be made for any class of work included in a lump sum Contract Item or a unit price Contract Item, unless specific provision is

made therefor in the Contract Documents.

ARTICLE 10.02 SUBMISSION OF BID BREAKDOWN

Within fifteen (15) days after the execution of this Contract, the Contractor must submit to the Engineer in duplicate an acceptable breakdown of the lump sums and unit prices bid for items of the Contract, showing the various operations to be performed under the Contract, as described in the progress schedule required under Article 4.02 hereof, and the value of each of such operations, the total of such items to equal the total price bid. The Contractor shall also submit such other information relating to the bid prices as may be required and shall revise the bid breakdown as directed. Thereafter, the breakdown may be used for checking the Contractor's applications for partial payments hereunder but shall not be binding upon the City or the Engineer for any purpose whatsoever.

ARTICLE 10.03 REPORTS, RECORDS AND DATA

The Contractor shall furnish to the Engineer such schedules of quantities and costs, progress schedules, reports, invoices, delivery tickets, estimates, records, and other data as the Engineer may request concerning work performed or to be performed and the materials furnished under the Contract.

ARTICLE 10.04 PAYMENTS BY CONTRACTOR

The Contractor shall pay (a) for all transportation and utility services not later than the 20th day of the calendar month following that in which such services are rendered, (b) for all materials, tools, and equipment delivered at the site of the project, and the balance of the cost thereof not later than the 30th day following the completion of that part of the work in or on which such materials, tools, and equipment are incorporated or used, and (c) to each of his subcontractors, not later than the 5th day following each payment to the Contractor, the respective amounts allowed the Contractor on account of the work performed by his subcontractors, to the extent of each subcontractor's interest therein; and proof of such payments or releases therefor shall be submitted to the Engineer upon request.

ARTICLE 10.05 PARTIAL PAYMENTS

On or about the first of each month, the Contractor shall make and certify an estimate, on forms prescribed by the City, of the amount and fair value of the work done, and may apply for partial payment therefor. The Contractor shall revise the estimate as the Engineer may direct. When satisfactory progress has been made, and shows that the value of the work completed since the last payment exceeds one percent (1%) of the total Contract price in amount, the Engineer will issue a certificate that such work has been completed and the value thereof. The City will then issue a voucher to the Contractor in accordance with the following schedule:

FOR CONTRACT AMOUNTS UNDER \$250,000

(A) In the amount of ninety percent (90%) of the value of the work completed as certified until construction is one hundred percent (100%) complete (operational or beneficial occupancy), the withheld amount may be reduced below ten percent (10%), at the Engineer's option, to only that amount necessary to assure completion.

FOR CONTRACT AMOUNTS OVER \$250,000

(A) In the amount of ninety percent (90%) of the value of the work completed as certified until construction is fifty percent (50%) complete.

(B) When the dollar value, as determined by the Engineer, of satisfactorily completed work in place is greater than fifty percent (50%) of the original contract price, vouchers for partial payment will be issued by the City to the Contractor in the amount of one hundred percent (100%) of the value of the work, above 50%, completed as certified for that payment period.

(C) If the Contractor has performed satisfactorily and the work is substantially complete (operational or beneficial occupancy) the withheld amount may be reduced, at the Engineer's option, to only that amount necessary to assure completion.

In addition to the Conditions set forth in (A), (B), and (C) above, payments will always be less any sums that may be retained or deducted by the City under the terms of any of the contract documents and less any sums that may be retained to cover monetary guarantees for equipment, materials or progress performance.

Payment on estimates made on or about the first of the month may be expected on or about the 20th of the month.

Unless specified otherwise in the Contract Items, the delivered cost of equipment and nonperishable materials suitably stored at the site of the work and tested for adequacy may be included in the Contractor's application for partial payment provided, however, that the Contractor shall furnish evidence satisfactory to the City that the Contractor is the unconditional owner and in possession of such materials or equipment. The amount to be paid will be 90 percent of the invoice cost to the Contractor which cost shall be supported by receipted bills within 30 days of the date of payment by the City to the Contractor. Such payment shall not relieve the Contractor from full responsibility for completion of the work and for protection of such materials and equipment until incorporated in the work in a permanent manner as required by the Contract Documents.

Before any payment will be made under this Contract, the Contractor and every subcontractor, if required, shall deliver to the Engineer a written, verified statement, in satisfactory form, showing in detail all amounts then due and unpaid by such Contractor or subcontractor to all laborers, workmen, and mechanics, employed by him under the Contract for the performance of the work at the site thereof, for daily or weekly wages, or to other persons for materials, equipment, or supplies delivered at the site of the work during the period covered by the payment under consideration.

ARTICLE 10.06 FINAL PAYMENT

Under determination of satisfactory completion of the work under this Contract as provided in Article 4.07 hereof, the Engineer will prepare the final estimate showing the value of the completed work. This estimate will be prepared within 30 days after the date of completion or as soon thereafter as the necessary measurements and computations can be made.

All prior certificates and estimates, being approximate only, are subject to correction in the final estimate and payment.

When the final estimate has been prepared and certified by Engineer, he will submit to the Mayor and City Council the final certificate stating that the work has been completed and the amount based on the final estimate remaining due to the Contractor. The City will then accept the work as fully completed and will, not later than 30 days after the final acceptance, as defined in Article 1.02, of the work done under this Contract, pay the Contractor the entire amount so found due thereunder after deduction of all previous payments and all percentages and amounts to be kept and retained under provisions of this Contract; provided, however, and it is understood and agreed that, as a precedent to receiving final payment, the Contractor shall submit to the City a sworn affidavit that all bills for labor, service, materials, and subcontractors have been paid and that there are no suits pending in connection with this work. The City, at its option, may permit the Contractor to execute a separate surety bond in a form satisfactory to the City. The surety bond shall be in the full amount of the suit or suits.

Neither the final payment nor any part of the retained percentage shall be paid until the Contractor, if required, shall furnish the City with a complete release from any should remain unsatisfied after all payments are made, the Contractor shall refund to the City all monies which the City may be compelled to pay in discharging such claim, including incidental costs and attorney's fees.

ARTICLE 10.07 ACCEPTANCE OF FINAL PAYMENT

The acceptance by the Contractor, or by anyone claiming by or through him, of the final payment shall operate as and shall be a release to the City and every officer and agent thereof from any and all claims and liability to the Contractor for anything done or furnished in connection with the work or project and for any act or neglect of the Contractor or of any others relating to or affecting the work. No payment, however, final or otherwise, shall operate to release the Contractor or his sureties from any obligations under this Contract or the Performance Bond.

SECTION 11 MISCELLANEOUS PROVISIONS

ARTICLE 11.01 CONTRACTOR'S WARRANTIES

In consideration of, and to induce the award of this contract to him, the Contractor represents and warrants:

- (a) That he is not in arrears to the City upon debt or contract, and he is not a defaulter, as surety, contractor, or otherwise.
- (b) That he is financially solvent and sufficiently experienced and competent to perform the work.
- (c) That the work can be performed as called for by the Contract Documents.
- (d) That the facts stated in his proposal and the information given by him are true and correct in all respects.
- (e) That he is fully informed regarding all the conditions affecting the work to be done and labor and materials to be

furnished for the completion of this Contract, and that his information was secured by personal investigation and research.

ARTICLE 11.02 PATENTED DEVICES, MATERIAL AND PROCESSES

It is mutually understood and agreed that Contract prices include all royalties and costs arising from patents, trademarks, and copyrights in any way involved in the work. Whenever the Contractor is required or desires to use any design, device, material, or process covered by letters of patent or copyright, the Contractor shall indemnify and save harmless the City, its officers, agents and employees from any and all claims for infringement by reason of the use of any such patented design, device, tool, material, equipment, or process, to be performed under the Contract, and shall indemnify the said City, its officers, agents, and employees for any costs, expenses, and damages which may be incurred by reason of such infringement at any time during the prosecution or after completion of the work.

ARTICLE 11.03 SUITS AT LAW

In case any action at law or suit in equity may or shall be brought against the City or any of its officers, agents, or employees for or on account of the failure, omission, or neglect of the Contractor or his subcontractors, employees, or agents, to do or perform any of the covenants, acts, matters, or things by this Contract undertaken to be done or performed by the Contractor or his subcontractors, employees, or agents, or from any injuries done to property or persons and caused by the negligence or alleged negligence of the Contractor or his subcontractors, employees, or agents, or in any other manner arising out of the performance of this Contract, then the Contractor shall immediately assume and take charge of the defense of such actions or suits in like manner and to all intents and purposes as if said actions or suits have been brought directly against the Contractor, and the Contractor shall also indemnify and save harmless the City, its officers, agents, and employees from any and all loss, cost or damage whatever arising out of such actions or suits, in like manner and to all intents and purposes as if said actions or suits have been brought directly against the Contractor.

The Contractor shall and does hereby assume all liability for and agrees to indemnify the City or its Engineer against any or all loss, costs, damages, and liability for any or by reason of any lien, claims or demands, either for materials purchased or for work performed by laborers, mechanics, and others and from any damages, costs, actions, or causes of action and judgement arising from injuries sustained by mechanics, laborers, or other persons by reason of accidents or otherwise, whether caused by the carelessness or inefficiency or neglect of said Contractor, his subcontractors, agents, employees, workmen or otherwise.

ARTICLE 11.04 CLAIMS FOR DAMAGES

If the Contractor shall claim compensation for any damage sustained, other than for extra or disputed work covered by Article 7.02 and 7.03 hereof, by reason of any act or omission of the City, its agents, or any persons, he shall, within five days after sustaining such damage, make and

deliver to the Engineer a written statement of the nature of the damage sustained and of the basis of the claim against the City. On or before the 15th of the month succeeding that in which any damage shall have been sustained, the Contractor shall make and deliver to the Engineer an itemized statement of the details and amounts of such damage, duly verified by the Contractor. Unless such statements shall be made delivered within the times aforesaid, it is stipulated that and all claims for such compensation shall be forfeited and invalidated, and the Contractor shall not be entitled to payment on account of such claims.

ARTICLE 11.05 NO CLAIMS AGAINST INDIVIDUALS

No claim whatsoever shall be made by the Contractor against any officer, agent, employee of the City for, or on account of, anything done or omitted to be done in connection with this Contract.

ARTICLE 11.06 LIABILITY UNAFFECTED

Nothing herein contained shall in any manner create any liability against the City on behalf of any claim for labor, services, or materials, or of subcontractors, and nothing herein contained shall affect the liability of the Contractor or his sureties to the City or to any workmen or materialsmen upon bond given in connection with this Contract.

ARTICLE 11.07 INDEMNIFICATION PROVISIONS

Whenever there appears in this Agreement, or in the other Contract Documents made a part hereof, an indemnification provision within the purview of Chapter 725.06, Laws of Florida, the monetary limitation on the extent of the indemnification under each such provision shall be One Million Dollars or a sum equal to the total Contract price, whichever shall be the greater.

ARTICLE 11.08 UNLAWFUL PROVISIONS DEEMED STRICKEN

If this contract contains any unlawful provisions not an essential part of the Contract and which shall not appear to have a controlling or material inducement to the making thereof, such provisions shall be deemed of no effect and shall, upon notice by either party, be deemed stricken from the Contract without affecting the binding force of the remainder.

ARTICLE 11.09 LEGAL PROVISIONS DEEMED INCLUDED

Each and every provision of any law and clause required by law to be inserted in this Contract shall be deemed to be inserted herein, and the Contract shall be read and enforced as though it were included herein and if, through mistake or otherwise, any such provision is not inserted or is not correctly inserted, then upon application of either party the Contract shall forthwith be physically amended to make such insertion.

ARTICLE 11.10 DEATH OR INCOMPETENCY OF CONTRACTOR

In the event of death or legal incompetency of a Contractor who shall be an individual or surviving member of a contracting firm, such death or adjudication of incompetency

shall not terminate the Contract, but shall act as default hereunder to the effect provided in Article 9.01 hereof and the estate of the Contractor and his surety shall remain liable hereunder to the same extent as though the Contractor had lived. Notice of default, as provided in Article 9.01 hereof, shall not be required to be given in the event of such death or adjudication of incompetency.

ARTICLE 11.11 NUMBER AND GENDER OF WORDS

Whenever the context so admits or requires, all references herein in one number shall be deemed extended to and including the other number, whether singular or plural, and the use of any gender shall be applicable to all genders.

ARTICLE 11.12 ACCESS TO RECORDS

Representatives of Federal Agencies, if applicable, and the State of Florida shall have access to the work whenever it is in preparation of progress. On federally assisted projects the Federal Agency, the Comptroller General of the United States, or any authorized representative shall have access to any books, documents, papers, and records of the Contractor which are pertinent to the project for the purpose of making audit, examination, excerpts, and transcription thereof.

**SECTION 12
LABOR STANDARDS**

ARTICLE 12.01 LABOR STANDARDS

The Contractor shall comply with all of the regulations set forth in "Labor Standards Provisions for Federally Assisted Construction Contracts", which may be attached, and any applicable Florida Statutes.

ARTICLE 12.02 NOTICE TO LABOR UNIONS

If required, the Contractor shall provide Labor Unions and other organizations of workers, and shall post, in a conspicuous place available to employees or applicants for employment, a completed copy of the form entitled "Notice to Labor Unions or Other Organizations of Workers" attached to and made a part of this Agreement.

ARTICLE 12.03 SAFETY AND HEALTH REGULATIONS

The Contractor shall comply with the Department of Labor Safety and Health Regulations for construction promulgated under the Occupational Safety and Health Act of 1970 (PL 91- 596) and under Section 107 of the Contract Work Hours and Safety Standards Act (PL 91-54). Nothing in these Acts shall be construed to supersede or in any manner affect any worker's compensation law or statutory rights, duties, or liabilities of employers and employees under any law with respect to injuries, diseases, or death of employees arising out of, or in the course of, employment.

ARTICLE 12.04 EEO AFFIRMATIVE ACTION REQUIREMENTS

The Contractor understands and agrees to be bound by the equal opportunity requirements of Federal regulations which shall be applicable throughout the performance of work under this Contract. The Contractor also agrees to similarly

bind contractually each subcontractor. In policies, the Contractor agrees to engage in Affirmative Action directed at promoting and ensuring equal employment opportunity in the work force used under the Contract (and the Contractor agrees to require contractually the same effort of all subcontractors whose subcontractors exceed \$100,000). The Contractor understands and agrees that "Affirmative Action" as used herein shall constitute a good faith effort to achieve and maintain minority employment in each trade in the on-site work force used on the Contract.

ARTICLE 12.05 PREVAILING RATES OF WAGES

Florida's prevailing wage law was repealed effective April 25, 1979.

For Federally assisted projects, appropriate prevailing wage rate determinations are indicated on pages beginning with WR-1.

* * * * *

IN WITNESS THEREOF, the parties have hereunto set their hands and seals, and such of them as are corporation have caused these present to be signed by their duly authorized officers.

CITY OF TAMPA, FLORIDA

Jane Castor, Mayor
(SEAL)

ATTEST:

City Clerk

Approved as to Form:
The execution of this document was authorized
by Resolution No. _____

Justin R. Vaske E/S
Justin R. Vaske, Senior Assistant City Attorney

Contractor

By: _____
(SEAL)

Title:

ATTEST:

Witness

**Bidder's Statement Regarding
Bidder's Criminal History Screening Practices:**

Pursuant to Sec. 2-284. - Bidder's Criminal History Screening Practices, the bidder declares as follows:

The Bidder hereby declines any discount or incentive related to Section 2-284 Bidder's Criminal History Screening Practices.

The Bidder hereby applies for applicable discount or incentive related to Section 2-284 Bidder's Criminal History Screening Practices. The following documentation and assurances are provided:

___ Notarized past employment analysis that includes the number of disadvantaged workers the bidder has hired in the past, or, if the bidder has never hired a disadvantaged worker, an explanation that the bidder made a good faith effort to hire a disadvantaged worker: and,

___ An estimate of the number of disadvantaged workers that the bidder has hired or plans to hire if the bidder is awarded the project; and,

___ Evidence that the bidder's recruitment literature and employment policy does not include language that is disadvantageous to a disadvantaged worker.

___ Identifies, [] hereon [] in attached document, potential job opportunities under the project that may be available for disadvantaged workers if the City awards the Bidder the project; and,

___ Agrees to consider for job placement at least one otherwise qualified disadvantaged worker, to the extent a job opportunity is available, if and after the Bidder is awarded the project; or

___ The Bidder currently employs a percentage of disadvantaged workers consistent with industry standards as determined by the director of the soliciting department or designee.

Signed _____

Date _____

Name _____

Title _____

Firm _____

Project _____

PUBLIC CONSTRUCTION BOND

Bond No. (enter bond number) _____

Name of Contractor: _____

Principal Business Address of Contractor: _____

Telephone Number of Contractor: _____

Name of Surety (if more than one list each): _____

Principal Business Address of Surety: _____

Telephone Number of Surety: _____

Owner is The City of Tampa, Florida

Principal Business Address of Owner: _____ 306 E Jackson St, Tampa, FL 33602

_____ Contract Administration Department (280A4N)

Telephone Number of Owner: _____ 813/274-8456

Contract Number Assigned by City to contract which is the subject of this bond: _____

Legal Description or Address of Property Improved or Contract Number is: _____

General Description of Work and Services: _____

KNOW ALL MEN BY THESE PRESENTS That we, _____

(Name of Contractor)

as Principal, hereinafter called CONTRACTOR, of the State of _____, and

(Name of Surety)

a corporation organized and existing under and by virtue of the laws of the State of _____, and regularly authorized to do business in the State of Florida, as SURETY, are held and firmly bound unto the City of Tampa, a municipal corporation organized and existing under the laws of the State of Florida, hereinafter called Owner, in the penal sum of _____ Dollars and _____ Cents (\$ _____), lawful money of the United States of America, for the payment whereof well and truly to be made, we bind ourselves, our heirs, executors, and administrators, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS BOND is that if Principal:

1. Performs the contract dated _____, _____, 20____, between Principal and Owner for construction of _____, the contract being made a part of this bond by reference, in the time and in the manner prescribed in the contract; and
2. Promptly makes payments to all claimants, as defined in Section 255.05(1) (Section 713.01), Florida Statutes, supplying Principal with labor, materials, or supplies, used directly or indirectly by Principal in the prosecution of the work provided for in the contract; and
3. Pays Owner all losses, damages, expenses, costs, and attorney's fees, including appellate proceedings, that Owner sustains because of a default by Principal under the contract; and
4. Performs the guarantee of all work and materials furnished under the contract for the time specified in the contract, then this bond is void; otherwise it remains in full force.
5. Contractor and Surety acknowledge that the Work for which this bond has been issued may be one of several such contract documents for a group of projects. This bond does not secure covenants to pay for or to perform design services survey or program management services. The Owner/Obligee is expected to reasonably account for damages that are caused to Owner with respect to Principal's (Contractor's) default in performance of the scope of the Work incorporated by reference into the bond, and notwithstanding any contractual or common law remedy permitted to Owner as against Contractor, the obligation of Surety for any damages under this bond shall be determined by the cost of completion of the Work less the contract balance unpaid upon default of Contractor for the Work plus liquidated damages at the rate of \$500.00 per day for delays by the Contractor and/or Surety in reaching substantial completion.
6. The notice requirements for claimants and conditions for entitlement to payment set forth in Section 255.05, Fla. Stat. and the limitations period to actions upon Section 255.05, Fla. Stat. bonds apply to claimants seeking payment from surety under this bond. Any action instituted by a claimant under this bond for payment must be in accordance with the notice and time limitation provisions in Section 255.05, Florida Statutes.
7. The Surety, for value received, hereby stipulates and agrees that no changes, extensions of time, alterations or additions to the terms of the contract documents or other Work to be performed hereunder, or the specifications referred to therein shall in any way affect its obligations under this bond, and it does hereby waive notice of any such changes, extensions of time, alterations or additions to the terms of the Contract or to Work or to the specifications.

8. The above SURETY states that it has read all of the Contract Documents made by the CONTRACTOR with the CITY, hereto attached, and the terms and conditions of the contract and work, and is familiar therewith and in particular those portions of the Agreement concerning the guaranty of such CONTRACTOR for a period of one year following the date of the final acceptance of the completed work under the Contract by the CITY, all of which this BOND includes.

DATED ON _____, 20__

(Name of Principal)

(Name of Surety)

(Principal Business Address)

(Surety Address)

By _____

By _____
(As Attorney in Fact)*

Title _____

Telephone Number of Surety

Telephone Number of Principal

Approved as to legal sufficiency:

Countersignature:

By Justin R. Vaske E/S
Justin R. Vaske, Senior Assistant City Attorney

(Name of Local Agency)

(Address of Resident Agent)

By _____

Title _____

Telephone Number of Local Agency

*(As Attorney in Fact) attach Power of Attorney and Current Certificate with Original Signature

SPECIFICATIONS GENERAL PROVISIONS

SECTION 1 SCOPE AND INTENT

G-1.01 DESCRIPTION

The work to be done consists of the furnishing of all labor, materials and equipment, and the performance of all work included in this Contract.

G-1.02 WORK INCLUDED

The Contractor shall furnish all labor, superintendence, materials, plant, power, light, heat, fuel, water, tools, appliances, equipment, supplies, and other means of construction necessary or proper for performing and completing the work. He shall obtain and pay for all required permits. He shall perform and complete the work in the manner best calculated to promote rapid construction consistent with safety of life and property and to the satisfaction of the Engineer, and in strict accordance with the Contract Documents. The Contractor shall clean up the work and maintain it during and after construction, until accepted, and shall do all work and pay all costs incidental thereto. He shall repair or restore all structures and property that may be damaged or disturbed during performance of the work.

The cost of incidental work described in these General Provisions, for which there are no specific Contract Items, shall be considered as part of the overhead cost of doing the work and shall be included in the prices for the various Contract Items. No additional payment will be made therefor.

The Contractor shall provide and maintain such modern plant, tools, and equipment as may be necessary, in the opinion of the Engineer, to perform in a satisfactory and acceptable manner all the work required by this Contract. Only equipment of established reputation and proven efficiency shall be used. The Contractor shall be solely responsible for the adequacy of his plant and equipment, prior approval of the Engineer notwithstanding.

G-1.03 PUBLIC UTILITY INSTALLATIONS AND STRUCTURES

Public utility installations and structures shall be understood to include all poles, tracks, pipes, wires, conduits, house service connections, vaults, manholes, and all other appurtenances and facilities pertaining thereto whether owned or controlled by the City, other governmental bodies or privately owned by individuals, firms, or corporations, and used to serve the public with transportation, traffic control, gas, electricity, telephone, sewerage, drainage, water or other public or private property which may be affected by the work.

The Contract Documents contain data relative to existing public utility installations and structures above and below the ground surface. These data are not guaranteed as to their completeness or accuracy and it is the responsibility of the Contractor to make his own investigations to inform himself

fully of the character, condition and extent of all such installations and structures as may be encountered and as may affect the construction operations.

The Contractor shall protect all public utility installations and structures from damage during the work. Access across any buried public utility installation or structure shall be made only in such locations and by means approved by the Engineer. The Contractor shall so arrange his operations as to avoid any damage to these facilities. All required protective devices and construction shall be provided by the Contractor at his expense. All existing public utilities damaged by the Contractor which are shown on the Plans or have been located in the field by the utility shall be repaired by the Contractor, at his expense, as directed by the Engineer. No separate payment shall be made for such protection or repairs to public utility installations or structures.

Public utility installations or structures owned or controlled by the City or other governmental body which are shown on the Plans to be removed, relocated, replaced or rebuilt by the Contractor shall be considered as a part of the general cost of doing the work and shall be included in the prices bid for the various Contract Items. No separate payment shall be made therefor.

Where public utility installations or structures owned or controlled by the City or other governmental body are encountered during the course of the work, and are not indicated on the Plans or in the Specifications, and when, in the opinion of the Engineer, removal, relocation, replacement or rebuilding is necessary to complete the work under this Contract, such work shall be accomplished by the utility having jurisdiction or such work may be ordered, in writing by the Engineer, for the Contractor to accomplish. If such work is accomplished by the utility having jurisdiction it will be carried out expeditiously and the Contractor shall give full cooperation to permit the utility to complete the removal, relocation, replacement or rebuilding as required. If such work is accomplished by the Contractor, it will be paid for as extra work as provided for in Article 7.02 of the Agreement.

The Contractor shall, at all times in performance of the work, employ approved methods and exercise reasonable care and skill so as to avoid unnecessary delay, injury, damage or destruction of public utility installations and structures; and shall, at all times in the performance of the work, avoid unnecessary interference with, or interruption of, public utility services, and shall cooperate fully with the owners thereof to that end.

All City and other governmental utility departments and other owners of public utilities, which may be affected by the work, will be informed in writing by the Engineer within two weeks after the execution of the Contract or Contracts covering the work. Such notice will set out, in general, and direct attention to, the responsibilities of the City and other governmental

utility departments and other owners of public utilities for such installations and structures as may be affected by the work and will be accompanied by one set of Plans and Specifications covering the work under such Contract or Contracts.

In addition to the general notice given by the Engineer, the Contractor shall give written notice to all City and other governmental utility departments and other owners of public utilities of the location of his proposed construction operations, at least forty-eight (48) hours in advance of breaking ground in any area or on any unit of the work. This can be accomplished by making the appropriate contact with the "Underground Utility Notification Center for Excavators (Call Candy)".

The maintenance, repair, removal, relocation, or rebuilding of public utility installations and structures, when accomplished by the Contractor as herein provided, shall be done by methods approved by the Engineer.

SECTION 2 PLANS AND SPECIFICATIONS

G-2.01 PLANS

The Plans referred to in the Contract Documents bear the general project name and number as shown in the Notice To Bidders.

When obtaining data and information from the Plans, figures shall be used in preference to scaled dimensions, and large scale drawings in preference to small scale drawings.

G-2.02 COPIES FURNISHED TO CONTRACTOR

After the Contract has been executed, the Contractor will be furnished with five sets of paper prints, the same size as the original drawings, of each sheet of the Plans and five copies of the Specifications. Additional copies of the Plans and Specifications, when requested, may be furnished to the Contractor at cost of reproduction.

The Contractor shall furnish each of the subcontractors, manufacturers, and material suppliers such copies of the Contract Documents as may be required for his work.

G-2.03 SUPPLEMENTARY DRAWINGS

When, in the opinion of the Engineer, it becomes necessary to explain more fully the work to be done or to illustrate the work further or to show any changes which may be required, drawings known as Supplementary Drawings, with specifications pertaining thereto, will be prepared by the Engineer and five paper prints thereof will be given to the Contractor.

The Supplementary Drawings shall be binding upon the Contractor with the same force as the Plans. Where such Supplementary Drawings require either less or more than the estimated quantities of work, credit to the City or compensation therefor to the Contractor shall be subject to the terms of the Agreement.

G-2.04 CONTRACTOR TO CHECK PLANS AND DATA

The Contractor shall verify all dimensions, quantities, and details shown on the Plans, Supplementary Drawings, Schedules, Specifications, or other data received from the Engineer, and shall notify him of all errors, omissions, conflicts, and discrepancies found therein. Failure to discover or correct errors, conflicts or discrepancies shall not relieve the Contractor of full responsibility for unsatisfactory work, faulty construction or improper operation resulting therefrom nor from rectifying such conditions at his own expense. He will not be allowed to take advantage of any errors or omissions as full instructions will be furnished by the Engineer, should such errors or omissions be discovered. All schedules are given for the convenience of the Engineer and the Contractor and are not guaranteed to be complete. The Contractor shall assume all responsibility for the making of estimates of the size, kind, and quality of materials and equipment included in work to be done under the Contract.

G-2.05 SPECIFICATIONS

The specifications consist of four parts, the General Provisions, the Technical Specifications, the Special Provisions and the Contract Items. The General Provisions and Technical Specifications contain general requirements which govern the work. The Special Provisions and the Contract Items modify and supplement these by detailed requirements for the work and shall always govern, whenever there appears to be conflict.

G-2.06 INTENT

All work called for in the Specifications applicable to this Contract, but not shown on the Plans in their present form, or vice versa, shall be of like effect as if shown or mentioned in both. Work not specified in either the Plans or in the Specifications, but involved in carrying out their intent or in the complete and proper execution of the work, is required and shall be performed by the Contractor as though it were specifically delineated or described.

The apparent silence of the Specifications as to any detail, or the apparent omission from them of a detailed description concerning any work to be done and materials to be furnished, shall be regarded as meaning that only the best general practice is to prevail and that only material and workmanship of the best quality is to be used, and interpretation of these Specifications shall be made upon that basis.

SECTION 3 WORKING DRAWINGS

G-3.01 SCOPE

The Contractor shall promptly prepare and submit layout, detail and shop drawings to insure proper construction, assembly, and installation of the work using those materials and methods as hereafter specified under the Technical Specifications, Special Provisions and Contract Items.

These drawings shall accurately and distinctly present the following:

- a. All working and erection dimensions.
- b. Arrangements and sectional views.
- c. Necessary details, including complete information for making connections between work under this Contract and work under other Contracts.
- d. Kinds of materials and finishes.
- e. Parts listed and description thereof.

Drawings for mechanical equipment shall present, where applicable, such data as dimensions, weight and performance characteristics. These data shall show conformance with the performance characteristics and other criteria incorporated in the Plans and Specifications.

Each drawing shall be dated and shall contain the name of the project, Division number and description, the technical specifications section number, names of equipment or materials and the location at which the equipment or materials are to be installed. Location shall mean both physical location and location relative to other connected or attached material. The Engineer will return unchecked any submittal which does not contain complete data on the work and full information on related matters.

Stock or standard drawings will not be accepted for review unless full identification and supplementary information is shown thereon in ink or typewritten form.

The Contractor shall review all working drawing submittals before transmitting them to the Engineer to determine that they comply with requirements of the Specifications. Drawings which are incomplete or are not in compliance with the Contract Documents shall not be submitted for processing by the Engineer. The Contractor shall place his stamp of approval on all working drawings submitted to the Engineer to indicate compliance with the above.

G-3.02 APPROVAL

If the working drawings show departures from the Contract requirements, the Contractor shall make specific mention thereof in his letter of submittal; otherwise approval of such submittals shall not constitute approval of the departure. Approval of the drawings shall constitute approval of the subject matter thereof only and not of any structure, material, equipment, or apparatus shown or indicated.

The approval of drawings will be general and shall not relieve the Contractor of responsibility for the accuracy of such drawings, nor for the proper fitting and construction of the work, nor for the furnishing of materials or work required by the Contract and not indicated on the drawings. No work called for by working drawings shall be done until such drawings have been approved by the Engineer.

The procedure in seeking approval of the working drawings shall be as follows:

1. The Contractor shall submit four complete sets of drawings

and other descriptive data together with one copy of a letter of transmittal to the Engineer for approval. The letter of transmittal shall contain the name of the project, contract number, technical specifications section number, the name of the Contractor, a list of drawings with numbers and titles, and any other pertinent information.

2. Drawings or descriptive data will be stamped "Approved", "Approved Subject to Corrections Marked", or "Examined and Returned for Correction" and one copy with a letter of transmittal will be returned to the Contractor.

3. If a drawing or other data is stamped "Approved", the Contractor shall insert the date of approval on five additional copies of the document and transmit the five copies to the Engineer together with one copy of a letter of transmittal containing substantially the same information as described in Instruction 1. above.

4. If a drawing or other data is stamped "Approved Subject to Corrections Marked", the Contractor shall make the corrections indicated and proceed as in Instruction 3., above.

5. If a drawing or data is stamped "Examined and Returned for Correction", the Contractor shall make the necessary corrections and resubmit the documents as set forth in Instruction 1., above. The letter of transmittal shall indicate that this is a resubmittal.

The Contractor shall revise and resubmit the working drawings as required by the Engineer, until approval thereof is obtained.

SECTION 4 MATERIALS AND EQUIPMENT

G-4.01 GENERAL REQUIREMENTS

All materials, appliances, and types or methods of construction shall be in accordance with the Specifications and shall, in no event, be less than that necessary to conform to the requirements of any applicable laws, ordinances, and codes.

All materials and equipment shall be new, unused, and correctly designed. They shall be of standard first grade quality, produced by expert personnel, and intended for the use for which they are offered. Materials or equipment which, in the opinion of the Engineer, are inferior or of a lower grade than indicated, specified, or required will not be accepted.

The quality of Workmanship and Materials entering into the work under this Contract shall conform to the requirements of the pertinent sections, clauses, paragraphs, and sentences, both directly and indirectly applicable thereto, of that part of the Technical Specifications, whether or not direct reference to such occurs in the Contract Items.

Equipment and appurtenances shall be designed in conformity with ANSI, ASME, IEEE, NEMA and other

generally accepted standards and shall be of rugged construction and of sufficient strength to withstand all stresses which may occur during fabrication, testing, transportation, installation, and all conditions of operation. All bearings and moving parts shall be adequately protected against wear by bushings or other approved means and shall be fully lubricated by readily accessible devices. Details shall be designed for appearance as well as utility. Protruding members, joints, corners, gear covers, and the like, shall be finished in appearance. All exposed welds shall be ground smooth and the corners of structural shapes shall be mitered.

Equipment shall be of the approximate dimensions as indicated on the Plans or as specified, shall fit the spaces shown on the Plans with adequate clearances, and shall be capable of being handled through openings provided in the structure for this purpose. The equipment shall be of such design that piping and electrical connections, ductwork, and auxiliary equipment can be assembled and installed without causing major revisions to the location or arrangement of any of the facilities.

Machinery parts shall conform exactly to the dimensions shown on the working drawings. There shall be no more fitting or adjusting in setting up a machine than is necessary in assembling high grade apparatus of standard design. The equivalent parts of identical machines shall be made interchangeable. All grease lubricating fittings on equipment shall be of a uniform type. All machinery and equipment shall be safeguarded in accordance with the safety codes of the ANSI and applicable state and local codes.

G-4.02 MANUFACTURER

The names of proposed manufacturers, suppliers, material, and dealers who are to furnish materials, fixtures, equipment, appliances or other fittings shall be submitted to the Engineer for approval, as early as possible, to afford proper investigation and checking. Such approval must be obtained before shop drawings will be checked. No manufacturer will be approved for any materials to be furnished under this Contract unless he shall be of good reputation and have a plant of ample capacity. He shall, upon the request of the Engineer, be required to submit evidence that he has manufactured a similar product to the one specified and that it has been previously used for a like purpose for a sufficient length of time to demonstrate its satisfactory performance.

All transactions with the manufacturers or subcontractors shall be through the Contractor, unless the Contractor shall request, in writing to the Engineer, that the manufacturer or subcontractor deal directly with the Engineer. Any such transactions shall not in any way release the Contractor from his full responsibility under this Contract.

Any two or more pieces of material or equipment of the same kind, type or classification, and being used for identical types of service, shall be made by the same manufacturer.

G-4.03 REFERENCE TO STANDARDS

Whenever reference is made to the furnishing of materials or

testing thereof to conform to the standards of any technical society, organization or body, it shall be construed to mean the latest standard, code, specification or tentative specification adopted and published at the date of advertisement for proposals, even though reference has been made to an earlier standard, and such standards are made a part hereof to the extent which is indicated or intended.

Reference to a technical society, organization or body may be made in the Specifications by abbreviations, in accordance with the following list:

AASHTO for American Association of State Highway and Transportation Officials (formerly AASHO)
ACI for American Concrete Institute
AGMA for American Gear Manufacturer's Association
AFBMA for Anti-Friction Bearing Manufacturer's Association
AISC for American Institute of Steel Construction
AISI for American Iron and Steel Institute
ANSI for American National Standards Institute
ASCE for American Society of Civil Engineers
ASTM for American Society for Testing and Materials
ASME for American Society of Mechanical Engineers
AWS for American Welding Society
AWWA for American Water Works Association
AWPA for American Wood Preservers Association
CEMA for Conveyor Equipment Manufacturers Association
CIPRA for Cast Iron Pipe Research Association
IEEE for Institute of Electrical and Electronic Engineers
IPCEA for Insulated Power Cable Engineers Association
NEC for National Electrical Code
NEMA for National Electrical Manufacturers Association
SAE for Society of Automotive Engineers
SHBI for Steel Heating Boiler Institute
Fed.Spec. for Federal Specifications
Navy Spec. for Navy Department Specifications
U.L.,Inc. for Underwriters' Laboratories, Inc.

When no reference is made to a code, standard or specification, the Standard Specifications of the ANSI, the ASME, the ASTM, the IEEE, or the NEMA shall govern.

G-4.04 SAMPLES

The Contractor shall, when required, submit to the Engineer for approval typical samples of materials and equipment. The samples shall be properly identified by tags and shall be submitted sufficiently in advance of the time when they are to be incorporated into the work, so that rejections thereof will not cause delay. A letter of transmittal, in duplicate, from the Contractor requesting approval must accompany all such samples.

G-4.05 EQUIVALENT QUALITY

Whenever, in the Contract Documents, an article, material, apparatus, equipment, or process is called for by trade name or by the name of a patentee, manufacturer, or dealer or by reference to catalogs of a manufacturer or dealer, it shall be understood as intending to mean and specify the article, material, apparatus, equipment or process designated, or any

equal thereto in quality, finish, design, efficiency, and durability and equally serviceable for the purposes for which it is intended.

Whenever material or equipment is submitted for approval as being equal to that specified, the decision as to whether or not such material or equipment is equal to that specified shall be made by the Engineer.

Upon rejection of any material or equipment submitted as the equivalent of that specifically named in the Contract, the Contractor shall immediately proceed to furnish the designated material or equipment.

Neither the approval by the Engineer of alternate material or equipment as being equivalent to that specified nor the furnishing of the material or equipment specified, shall in any way relieve the Contractor of responsibility for failure of the material or equipment, due to faulty design, material, or workmanship, to perform the functions required of them by the Specifications.

G-4.06 DELIVERY

The Contractor shall deliver materials in ample quantities to insure the most speedy and uninterrupted progress of the work so as to complete the work within the allotted time. The Contractor shall also coordinate deliveries in order to avoid a delay in, or impediment of, the progress of the work of any related Contractor.

G-4.07 CARE AND PROTECTION

The Contractor shall be solely responsible for properly storing and protecting all materials, equipment, and work furnished under the Contract from the time such materials and equipment are delivered at the site of the work until final acceptance thereof. He shall, at all times, take necessary precautions to prevent injury or damage by water, freezing, or by inclemencies of the weather to such materials, equipment and work. All injury or damage to materials, equipment, or work resulting from any cause whatsoever shall be made good by the Contractor.

The Engineer shall, in all cases, determine the portion of the site to be used by the Contractor for storage, plant or for other purposes. If, however, it becomes necessary to remove and restack materials to avoid impeding the progress of any part of the work or interference with the work to be done by any other Contractor, the Contractor shall remove and restack such materials at his own expense.

G-4.08 TOOLS AND ACCESSORIES

The Contractor shall, unless otherwise stated in the Contract Documents, furnish with each type, kind or size of equipment, one complete set of suitably marked high grade special tools and appliances which may be needed to adjust, operate, maintain, or repair the equipment. Such tools and appliances shall be furnished in approved painted steel cases, properly labeled and equipped with good grade cylinder locks and duplicate keys.

Spare parts shall be furnished as specified.

Each piece of equipment shall be provided with a substantial nameplate, securely fastened in place and clearly inscribed with the manufacturer's name, year of manufacture, serial number, weight and principal rating data.

G-4.09 INSTALLATION OF EQUIPMENT

The Contractor shall have on hand sufficient proper equipment and machinery of ample capacity to facilitate the work and to handle all emergencies normally encountered in work of this character.

Equipment shall be erected in a neat and workmanlike manner on the foundations at the locations and elevations shown on the Plans, unless directed otherwise by the Engineer during installation. All equipment shall be correctly aligned, leveled and adjusted for satisfactory operation and shall be installed so that proper and necessary connections can be made readily between the various units.

The Contractor shall furnish, install and protect all necessary anchor and attachment bolts and all other appurtenances needed for the installation of the devices included in the equipment specified. Anchor bolts shall be as approved by the Engineer and made of ample size and strength for the purpose intended. Substantial templates and working drawings for installation shall be furnished.

The Contractor shall, at his own expense, furnish all materials and labor for, and shall properly bed in non-shrink grout, each piece of equipment on its supporting base that rests on masonry foundations. Grout shall completely fill the space between the equipment base and the foundation.

G-4.10 OPERATING INSTRUCTIONS

The Contractor, through qualified individuals, shall adequately instruct designated employees of the City in the operation and care of all equipment installed hereunder, except for equipment that may be furnished by the City.

The Contractor shall also furnish and deliver to the Engineer three complete sets for permanent files, identified in accordance with Subsection G-3.01 hereof, of instructions, technical bulletins and any other printed matter, such as diagrams, prints or drawings, containing full information required for the proper operation, maintenance, and repair, of the equipment installed and the ordering of spare parts, except for equipment that may be furnished by the City.

In addition to the above three copies, the Contractor shall furnish any additional copies that may be required for use during construction and start-up operations.

G-4.11 SERVICE OF MANUFACTURER'S ENGINEER

The Contract prices for equipment shall include the cost of furnishing a competent and experienced engineer or superintendent who shall represent the manufacturer and shall assist the Contractor, when required, to install, adjust, test and place in operation the equipment in conformity with the Contract Documents. After the equipment is placed in

permanent operation by the City, such engineer or superintendent shall make all adjustments and tests required by the Engineer to provide that such equipment is in proper and satisfactory operating condition, and shall instruct such personnel as may be designated by the City in the proper operation and maintenance of such equipment.

SECTION 5 INSPECTION AND TESTING

G-5.01 GENERAL

The Contractor's attention is hereby directed to Article 3.03 of the Agreement.

Inspection and testing of materials will be performed by the City unless otherwise specified.

For tests specified to be made by the Contractor, the testing personnel shall make the necessary inspections and tests and the reports thereof shall be in such form as will facilitate checking to determine compliance with the Contract Documents. Five copies of the reports shall be submitted and authoritative certification thereof must be furnished to the Engineer as a prerequisite for the acceptance of any material or equipment.

If, in the making of any test of any material or equipment, it is ascertained by the Engineer that the material or equipment does not comply with the Contract, the Contractor will be notified thereof and he will be directed to refrain from delivering said material and equipment, or to remove it promptly from the site or from the work and replace it with acceptable material, without cost to the City.

Tests of electrical and mechanical equipment and appliances shall be conducted in accordance with recognized test codes of the ANSI, ASME, or the IEEE, except as may otherwise be stated herein.

The Contractor shall be fully responsible for the proper operation of equipment during tests and instruction periods and shall neither have nor make any claim for damage which may occur to equipment prior to the time when the City formally takes over the operation thereof.

G-5.02 COSTS

All inspection and testing of materials furnished under this Contract will be performed by the City or duly authorized inspection engineers or inspection bureaus without cost to the Contractor, unless otherwise expressly specified.

The cost of shop and field tests of equipment and of certain other tests specifically called for in the Contract Documents shall be borne by the Contractor and such costs shall be deemed to be included in the contract price.

Materials and equipment submitted by the Contractor as the equivalent to those specifically named in the Contract may be tested by the City for compliance. The Contractor shall reimburse the City for the expenditures incurred in making

such tests on materials and equipment which are rejected for noncompliance.

G-5.03 INSPECTIONS OF MATERIALS

The Contractor shall give notice, in writing to the Engineer, sufficiently in advance of his intention to commence the manufacture or preparation of materials especially manufactured or prepared for use in or as part of the permanent construction. Such notice shall contain a request for inspection, the date of commencement and the expected date of completion of the manufacture or preparation of materials. Upon receipt of such notice the Engineer will arrange to have a representative present at such times during the manufacture as may be necessary to inspect the materials or he will notify the Contractor that inspection will be made at a point other than the point of manufacture, or he will notify the Contractor that inspection will be waived. The Contractor must comply with these provisions before shipping any material. Such inspection shall not release the Contractor from the responsibility for furnishing materials meeting the requirements of the Contract Documents.

G-5.04 CERTIFICATE OF MANUFACTURE

When inspection is waived or when the Engineer so requires, the Contractor shall furnish to him authoritative evidence in the form of Certificates of Manufacture that the materials to be used in the work have been manufactured and tested in conformity with the Contract Documents. These certificates shall be notarized and shall include copies of the results of physical tests and chemical analyses, where necessary, that have been made directly on the product or on similar products of the manufacturer.

G-5.05 SHOP TESTS OF OPERATING EQUIPMENT

Each piece of equipment for which pressure, duty, capacity, rating, efficiency, performance, function, or special requirements are specified shall be tested in the shop of the maker in a manner which shall conclusively prove that its characteristics comply fully with the requirements of the Contract Documents. No such equipment shall be shipped to the work until the Engineer notifies the Contractor, in writing, that the results of such tests are acceptable.

Five copies of the manufacturer's actual test data and interpreted results thereof, accompanied by a certificate of authenticity sworn to by a responsible official of the manufacturing company, shall be forwarded to the Engineer for approval.

The cost of the shop tests and of furnishing manufacturer's preliminary and shop test data of operating equipment shall be borne by the Contractor.

G-5.06 PRELIMINARY FIELD TESTS

As soon as conditions permit, the Contractor shall furnish all labor, materials, and instruments and shall make preliminary field tests of equipment. If the preliminary field tests disclose any equipment furnished under this Contract which does not comply with the requirements of the Contract Documents, the Contractor shall, prior to the acceptance tests, make all changes, adjustments, and replacements required.

TEMPORARY STRUCTURES

G-5.07 FINAL FIELD TESTS

Upon completion of the work and prior to final payment, all equipment and appliances installed under this Contract shall be subjected to acceptance tests as specified or required to prove compliance with the Contract Documents.

The Contractor shall furnish labor, fuel, energy, water and all other materials, equipment, and instruments necessary for all acceptance tests, at no additional cost to the City.

G-5.08 FAILURE OF TESTS

Any defects in the materials and equipment or their failure to meet the tests, guarantees or requirements of the Contract Documents shall be promptly corrected by the Contractor by replacements or otherwise. The decision of the Engineer as to whether or not the Contractor has fulfilled his obligations under the Contract shall be final and conclusive. If the Contractor fails to make those corrections or if the improved materials and equipment, when tested, shall again fail to meet the guarantees or specified requirements, the City, notwithstanding its partial payment for work, and materials and equipment, may reject the materials and equipment and may order the Contractor to remove them from the site at his own expense.

In case the City rejects any materials and equipment, then the Contractor shall replace the rejected materials and equipment within a reasonable time. If he fails to do so, the City may, after the expiration of a period of thirty calendar days after giving him notice in writing, proceed to replace such rejected materials and equipment, and the cost thereof shall be deducted from any compensation due or which may become due the Contractor under this Contract.

The City agrees to obtain other equipment within a reasonable time and the Contractor agrees that the City may use the equipment furnished by him without rental or other charges until the new equipment is obtained.

Materials or work in place that fails to pass acceptability tests shall be retested at the direction of the construction engineer all such retests shall be at the Contractor's expense. The rates charged shall be in accordance with the Department of Public Works current annual inspection contract which is available for inspection at the offices of the Department of Public Works.

G-5.09 FINAL INSPECTION

The procedures for final inspection shall be in accordance with the provisions of Article 4.07 of the Agreement. During such final inspections, the work shall be clean and free from water. In no case will the final estimate be prepared until the Contractor has complied with all the requirements set forth and the Engineer has made his final inspection of the entire work and is satisfied that the entire work is properly and satisfactorily constructed in accordance with the requirements of the Contract Documents.

SECTION 6

G-6.01 GENERAL

All false work, scaffolding, ladders, hoistways, braces, pumping plants, shields, trestles, roadways, sheeting, centering forms, barricades, drains, flumes, and the like, any of which may be needed in the construction of any part of the work and which are not herein described or specified in detail, must be furnished, maintained and removed by the Contractor, and he shall be responsible for the safety and efficiency of such works and for any damages that may result from their failure or from their improper construction, maintenance, or operation.

G-6.02 PUBLIC ACCESS

At all points in the work where public access to any building, house, place of business, public road, or sidewalk would be obstructed by any action of the Contractor in executing the work required by this Contract, the Contractor shall provide such temporary structure, bridges or roadway as may be necessary to maintain public access at all times. At least one lane for vehicular traffic shall be maintained in streets in which the Contractor is working. Street closure permits are required from the Department of Public Works.

The Contractor shall provide suitable temporary bridges, as directed by the Engineer, at street intersections when necessary for the maintenance of vehicular and pedestrian traffic.

Prior to temporarily cutting of access to driveways and garages, the Contractor shall give twelve (12) hours notice to affected property owners. Interruptions to use of private driveways shall be kept to a minimum.

G-6.03 CONTRACTOR'S FIELD OFFICE

The Contractor shall erect, furnish and maintain a field office with a telephone at the site during the entire period of construction. He or an authorized agent shall be present at this office at all times while his work is in progress. Readily accessible copies of both the Contract Documents and the latest approved working drawings shall be kept at this field office.

G-6.04 TEMPORARY FENCE

If, during the course of the work, it is necessary to remove or disturb any fence or part thereof, the Contractor shall, at his own expense, if so ordered by the Engineer, provide a suitable temporary fence which shall be maintained until the permanent fence is replaced. The Engineer shall be solely responsible for the determination of the necessity for providing a temporary fence and the type of temporary fence to be used.

G-6.05 RESPONSIBILITY FOR TEMPORARY STRUCTURES

In accepting the Contract, the Contractor assumes full responsibility for the sufficiency and safety of all temporary structures or work and for any damage which may result from their failure or their improper construction, maintenance, or operation and will indemnify and save harmless the City from

all claims, suits or actions and damages or costs of every description arising by reason of failure to comply with the above provisions.

SECTION 7 TEMPORARY SERVICES

G-7.01 WATER

The Contractor shall provide the necessary water supply at his own expense. He shall, if necessary, provide and lay necessary waterlines from existing mains to the place of using, shall secure all necessary permits and pay for all taps to water mains or hydrants and for all water used at the established rates.

G-7.02 LIGHT AND POWER

The Contractor shall provide, at his own expense, temporary lighting and power facilities required for the proper prosecution and inspection of the work. If, in the opinion of the Engineer, these facilities are inadequate, the Contractor will not be permitted to proceed with any portion of the work affected thereby.

G-7.03 SANITARY REGULATIONS

The Contractor shall prohibit and prevent the committing of nuisances on the site of the work or on adjoining property and shall discharge any employee who violates this rule.

Ample washrooms and toilet facilities and a drinking water supply shall be furnished and maintained in strict conformity with the law by the Contractor for use by his employees.

G-7.04 ACCIDENT PREVENTION

Precautions shall be exercised at all times for the protection of persons and property. The safety provisions of applicable laws, building and construction codes shall be observed. The Contractor shall comply with the U. S. Department of Labor Safety and Health Regulations for construction promulgated under the Occupational Safety and Health Act of 1970 (PL 91-596), and under Section 107 of the Contract Work. Hours and Safety Standards Act (PL 91-54), except where state and local safety standards exceed the federal requirements and except where state safety standards have been approved by the Secretary of Labor in accordance with provisions of the Occupational Safety and Health Act.

G-7.05 FIRST AID

The Contractor shall keep upon the site, at each location where work is in progress, a completely equipped first aid kit and shall provide ready access thereto at all times when men are employed on the work.

G-7.06 HEATING

The Contractor shall provide temporary heat, at his own expense, whenever required on account of work being carried on during cold weather and to prevent freezing of water pipes and other damage to the work.

SECTION 8

LINES AND GRADES

G-8.01 GENERAL

All work done under this Contract shall be constructed in accordance with the lines and grades shown on the Plans, or as given by the Engineer. The full responsibility for keeping alignment and grade shall rest upon the Contractor.

The Engineer will establish bench marks and base line controlling points. Reference remarks for lines and grades as the work progresses will be located to cause as little inconvenience to the prosecution of the work as possible. The Contractor shall so place excavation and other materials as to cause no inconvenience in the use of the reference marks provided. He shall remove any obstructions placed by him contrary to this provision.

G-8.02 SURVEYS

The Contractor shall furnish and maintain, at his own expense, stakes and other such materials, and give such assistance, including qualified helpers, as may be required by the Engineer for setting reference marks. The Contractor shall check such reference marks by such means as he may deem necessary and, before using them, shall call the Engineer's attention to any inaccuracies. The Contractor shall, at his own expense, establish all working or construction lines and grades as required from the reference marks set by the Engineer, and shall be solely responsible for the accuracy thereof. He shall, however, be subject to the check and review of the Engineer.

The Contractor shall keep the Engineer informed a reasonable time in advance as to his need for line and grade reference marks, in order that they may be furnished and all necessary measurements made for record and payment with the minimum of inconvenience to the Engineer or of delay to the Contractor.

It is the intention not to delay the work for the establishment of reference marks but, when necessary, working operations shall be suspended for such reasonable time as the Engineer may require for this purpose.

G-8.03 SAFEGUARDING MARKS

The Contractor shall safeguard all points, stakes, grade marks, monuments and bench marks made or established on the work, bear the cost of reestablishing them if disturbed, and bear the entire expense of rectifying work improperly installed due to not maintaining or protecting or to removing without authorization such established points, stakes and marks.

The Contractor shall safeguard all existing and known property corners, monuments and marks adjacent to but not related to the work and, if required, shall bear the cost of reestablishing them if disturbed or destroyed.

G-8.04 DATUM PLANE

All elevations indicated or specified refer to the Mean Sea Level Datum of the U.S.C. & G.S. (N.O.S.) which is 0.80 feet above the Mean Low Water Datum of the U. S. Army

Corps of Engineers.

SECTION 9 ADJACENT STRUCTURES AND LANDSCAPING

G-9.01 RESPONSIBILITY

The responsibility for removal, replacement, relocation, repair, rebuilding or protection of all public utility installations, including poles, tracks, pipes, wires, conduits, house service connections, vaults, manholes, sewers, traffic control and fire alarm signal circuit installations and other appurtenances and facilities shall be in accordance with G-1.02 and G-1.03.

The Contractor shall also be entirely responsible and liable for all damage or injury as a result of his operations to all other adjacent public and private property, structures of any kind and appurtenances thereto met with during the progress of the work. The cost of protection, replacement in their original locations and conditions or payment of damages for injuries to such adjacent public and private property and structures affected by the work, whether or not shown on the Plans, and the removal, relocation, and reconstruction of such items called for on the Plans or specified shall be included in the various Contract Items and no separate payment will be made therefor. Where such public and private property, structures of any kind and appurtenances thereto are not shown on the Plans and when, in the opinion of the Engineer, removal or relocation and reconstruction is necessary to avoid interference with the work, payment therefor will be made as provided for extra work in Article 7.02 of the Agreement.

G-9.02 PROTECTION OF TREES

All trees and shrubs shall be adequately protected by the Contractor with boxes or otherwise and, within the City of Tampa, in accordance with ordinances governing the protection of trees. No excavated materials shall be placed so as to injure such trees or shrubs. Trees or shrubs destroyed by negligence of the Contractor or his employees shall be replaced by him with new stock of similar size and age, at the proper season, and at the sole expense of the Contractor.

Beneath trees or other surface structures, where possible, pipelines may be built in short tunnels, backfilled with excavated materials, except as otherwise specified, or the trees or structures carefully supported and protected from damage.

The City may order the Contractor, for the convenience of the City, to remove trees along the line of trench excavation. If so ordered, the City will obtain any permits required for removal of trees. Such tree removal ordered shall be paid for under the appropriate Contract Items.

G-9.03 LAWN AREAS

Lawn areas shall be left in as good condition as before the starting of the work. Where sod is to be removed, it shall be carefully removed and later replaced, or the area where sod has been removed shall be restored with new sod in the

manner described in the Technical Specifications section.

G-9.04 RESTORATION OF FENCES

Any fence, or part thereof, that is damaged or removed during the course of the work shall be replaced or repaired by the Contractor and shall be left in as good a condition as before the starting of the work. The manner in which the fence is repaired or replaced and the materials used in such work shall be subject to the approval of the Engineer. The cost of all labor, materials, equipment, and work for the replacement or repair of any fence shall be deemed included in the appropriate Contract Item or Items, or if no specific Item is provided therefor, as part of the overhead cost of the work, and no additional payment will be made therefor.

SECTION 10 PROTECTION OF WORK AND PUBLIC

G-10.01 TRAFFIC REGULATIONS

The Contractor shall arrange his work to comply with Article G-6.02. The work shall be done with the least possible inconvenience to the public and to that end the work may be confined by the Engineer to one block at a time.

G-10.02 BARRIERS AND LIGHTS

During the prosecution of the work, the Contractor shall put up and maintain at all times such barriers, and lights, as will effectually prevent accidents. The Contractor shall provide suitable barricades, red lights, "danger" or "caution" or "street closed" signs and watchmen at all places where the work causes obstructions to the normal traffic or constitutes in any way a hazard to the public. Such barriers and signs shall be constructed to State of Florida Department of Transportation standards and placed as recommended by the Traffic Division of the City's Department of Public Works.

No open fires will be permitted.

G-10.03 SMOKE PREVENTIONS

The Contractor shall use hard coal, coke, oil or gas as fuel for equipment generating steam. A strict compliance with ordinances regulating the production and emission of smoke will be required.

G-10.04 NOISE

The Contractor shall eliminate noise to as great an extent as practicable at all times. Air compressing plants shall be equipped with silencers and the exhaust of all gasoline motors or other power equipment shall be provided with mufflers. In the vicinity of hospitals and schools, special care shall be used to avoid noise or other nuisances. The Contractor shall strictly observe all local regulations and ordinances covering noise control.

Except in the event of an emergency, no work shall be done between the hours of 7:00 p.m. and 7:00 a.m., or on Sundays. If the proper and efficient prosecution of the work requires operations during the night, the written permission of the Engineer shall be obtained before starting such items of the work.

**SECTION 13
CLEANING**

G-10.05 ACCESS TO PUBLIC SERVICES

Neither the materials excavated nor the materials or plant used in the construction of the work shall be so placed as to prevent free access to all fire hydrants, valves or manholes.

G-10.06 DUST PREVENTION

The Contractor shall prevent dust nuisance from his operations or from traffic by keeping the streets sprinkled with water at all times.

G-10.07 PRIVATE PROPERTY

The Contractor shall so conduct the work that no equipment, material, or debris will be placed or allowed to fall upon private property in the vicinity of the work unless he shall have obtained the owner's written consent thereto and shall have shown this consent to the Engineer.

**SECTION 11
SLEEVES AND INSERTS**

G-11.01 COORDINATION

When the Contract requires the placing of conduits, saddles, boxes, cabinets, sleeves, inserts, foundation bolts, anchors, and other like work in floors, roofs, or walls of buildings and structures, they shall be promptly installed in conformity with the construction program. The Contractor who erects the floors, roofs, and walls shall facilitate such work by fully cooperating with the Contractors responsible for installing such appurtenances. The Contractor responsible for installing such appurtenances shall arrange the work in strict conformity with the construction schedule and avoid interference with the work of other contractors.

G-11.02 OPENINGS TO BE PROVIDED

In the event timely delivery of sleeves and other materials cannot be made and to avoid delay, the affected Contractor may arrange to have boxes or other forms set at the locations where the appurtenances are to pass through or into the floors, roofs, walls, or other work. Upon the subsequent installation of these appurtenances, the Contractor erecting the structure shall fill around them with materials as required by the Contract. The necessary expenditures incurred for the boxing out and filling in shall be borne by the Contractor or Contractors required to furnish the sleeves and inserts. Formed openings and later installation of sleeves will not be permitted at locations subject to hydrostatic pressure.

**SECTION 12
CUTTING AND PATCHING**

G-12.01 GENERAL

The Contractor shall do all cutting, fitting, or patching of his portion of the work that may be required to make the several parts thereof join and coordinate in a manner satisfactory to the Engineer and in accordance with the Plans and Specifications. The work must be done by competent workmen skilled in the trade required by the restoration.

G-13.01 DURING CONSTRUCTION

During construction of the work, the Contractor shall, at all times, keep the site of the work and adjacent premises as free from material, debris, and rubbish as is practicable and shall remove the same from any portion of the site if, in the opinion of the Engineer, such material, debris, or rubbish constitutes a nuisance or is objectionable.

The Contractor shall remove from the site all of his surplus materials and temporary structures when no further need therefor develops.

G-13.02 FINAL CLEANING

At the conclusion of the work, all erection plant, tools, temporary structures and materials belonging to the Contractor shall be promptly taken away, and he shall remove and promptly dispose of all water, dirt, rubbish or any other foreign substances.

The Contractor shall thoroughly clean all equipment and materials installed by him and shall deliver such materials and equipment undamaged in a bright, clean, polished, and new appearing condition.

**SECTION 14
MISCELLANEOUS**

G-14.01 PROTECTION AGAINST SILTATION AND BANK EROSION

The Contractor shall arrange his operations to minimize siltation and bank erosion on construction sites and on existing or proposed watercourses and drainage ditches.

G-14.02 EXISTING FACILITIES

The work shall be so conducted to maintain existing facilities in operation insofar as is possible. Work shall be scheduled to minimize bypassing during construction. Requirements and schedules of operations for maintaining existing facilities in service during construction shall be as described in the Special Provisions.

G-14.03 USE OF CHEMICALS

All chemicals used during project construction or furnished for project operation, whether herbicide, pesticide, disinfectant, polymer, reactant or of other classification, must show approval of either EPA or USDA. Use of all such chemicals and disposal of residues shall be in strict conformance with instructions.

SPECIFIC PROVISIONS

SP-1 Scope and Contractor Qualifications

The contract is for the improvements to the existing three-million-gallon Northwest Ground Storage Tank as shown on the Drawings and specified herein. Work consists of furnishing all labor, equipment, and materials for the construction of the facilities

The CONTRACTOR must conform to the experience and documentation requirements outlined in the Instructions to Bidders, I-2.02. Additionally, the CONTRACTOR must demonstrate the ability and experience to construct, install, and operate the work described in these Specifications and as shown on the Plans, all as required for a complete functional installation, and as described and directed by the ENGINEER. At a minimum, the CONTRACTOR must have 10 years of successful project experience serving as the prime contractor for projects of comparable type and scale.

SP-2 Permits and Authorizations

The CONTRACTOR shall obtain any required building permits and shall obtain other permits, licenses and authorizations required for a completed project. The CONTRACTOR is responsible for complying with all licenses, regulations, ordinances, conditions, and permits of the various authorities having jurisdiction over the work.

The CONTRACTOR is responsible to schedule and coordinate with the CITY all required inspections and tests for all phases of work to obtain final approval.

The CONTRACTOR shall be responsible for obtaining any required permits or exemptions from federal, state, regional, and local regulatory agencies.

SP-3 Environmental Protection

The CONTRACTOR will be held liable for the violation of any and all environmental regulations. Violation citations carry civil penalties and in the event of willful violation, criminal penalties. Refer also to Tampa Agreement Article 3.09.

SP-4 Construction Start

Construction shall not begin prior to receipt by the CITY of the required permits. If issuance of the Notice to Proceed is delayed due to permit acquisition, the contract time will be extended to suit, but no extra payment will be made to the CONTRACTOR. Refer also to Tampa Agreement Article 4.01.

SP-5 Coordination and Cooperation

In performing work under this Contract, the CONTRACTOR shall coordinate work with that of any adjacent contractors for the CITY, and others, and cooperate with them in every reasonable way, to the end that there shall be the minimum practicable interference with their operations.

SP-7 Material and Equipment Approval

The CONTRACTOR shall not enter into subcontracts, or place any order for the furnishing of any material or equipment until he has received the ENGINEER's written approval of the material and equipment. After the CONTRACTOR has received approval of the ENGINEER, procurement shall commence.

SP-8 UNUSED

This section has been intentionally left blank.

SP-9 Contractor's Field Office

Not required for this project

SP-10 Salvage

All existing pipe, appurtenances and equipment removed by the CONTRACTOR shall become the property of the CONTRACTOR and shall be removed from the site of the work to the CONTRACTOR's own place of disposal.

SP-11 Sequence of Operations

The CONTRACTOR shall be responsible for scheduling his work in an orderly fashion to meet the project goals described herein. The CONTRACTOR shall perform the work in a manner that will not disturb Water Department operations.

A detailed construction sequence and schedule shall be submitted to the ENGINEER for approval.

SP-12 Cleaning and Project Cleanup

The CONTRACTOR will be responsible for keeping the construction site neat and clean with debris to be removed regularly as the work progresses. Refer also to General Provisions Section 13.

SP-13 Surface Restoration

Where construction activities are conducted in existing grassed areas, the grassed areas shall be restored as specified or directed by sodding to match existing conditions, including species of grass. Surface restoration in paved areas, where applicable, shall be as shown on the Plans and in accordance with SP-30.

SP-14 Work Adjacent to Utilities

Existing utilities shall be protected as shown on the Plans, specified herein, and in accordance with the requirements of the Agreement. All excavations for pipelines or conduits shall be hand dug with care to avoid damaging underground structures or utilities that may not be shown on the Plans. Refer also to General Provisions Section 1.03.

SP-15 Water and Electric Services

The CITY will provide potable water supply from an existing connection or fixture. The quantity of water available is limited to that which might flow from a hose connection. Any other water required by the CONTRACTOR for the Work shall be the responsibility of the CONTRACTOR and shall be supplied from his own source of supply (tanker trucks or the like). Construction and removal of piping from existing connections and/or use of a separate construction water service shall be the responsibility of the CONTRACTOR, and such cost shall be included in the Lump Sum Price and no separate payment will be made therefore. This provision supersedes General Provisions Section G-7.01 and Supplementary

General Provisions Section 2.6 pertaining to General Provisions Section G-7.01.

The CONTRACTOR may utilize power that is available at existing 120V electrical outlets located in the vicinity of the Work, as approved by the CITY. Additional power, if necessary, will be the responsibility of the CONTRACTOR.

SP-16 Protection of Trees and Shrubs

CONTRACTOR shall take care not to disturb trees and ornamental vegetation. Should damage occur, the CITY shall be informed so that an assessment can be made. CONTRACTOR shall be responsible for remediation to the extent necessary as determined by the CITY.

SP-17 Facility Operations During Construction

CONTRACTOR shall perform all work in recognition of and coordination with on-going Tank Operation activities. The following shall apply:

CONTRACTOR shall perform work in a manner to minimize noise, vibration, dust and debris. CONTRACTOR shall coordinate with the CITY'S Water Production Division in advance of operations producing excessive noise and/or vibration and the use of non-designated areas in order to avoid disruption or interference with operations.

Staging areas shall be as designated, unless adjustments requested by the CONTRACTOR are pre-approved by the CITY.

Deliveries or other use of non-designated areas at the tank property shall be coordinated in advance with the CITY.

Company vehicles will be allowed on the premises provided they are properly marked.

Provide and install barricades, signage, etc. as needed to designate work areas, as well as protection for persons and existing materials to remain in, and adjacent to, work areas. Maintain protections as needed throughout the course of the Work.

Following each and every work session, leave site in clean and orderly fashion with site protections in place.

The CONTRACTOR shall have a supervisor on-site with Contract related personnel at all times. Failure to adhere to approved sequencing/layout plan and/or failure to have supervisory personnel present and/or failure to maintain appropriate site conditions will be cause for work stoppage without additional Contract time.

SP-18 Testing

The cost of all testing required shall be borne by the CONTRACTOR.

SP-19 Monthly Schedules

In addition to the Progress Schedule required in Article 4.02 of the Agreement, the CONTRACTOR shall submit a monthly schedule with each pay estimate. Pay estimates will not be processed unless accompanied by an updated monthly schedule. The schedule shall be broken down into categories

including but not limited to:

1. Procurement status
2. Demolition
3. Repair of concrete spalls on tank floor, walls, and dome
4. Repair of concrete cracking on tank floor, walls, and dome
5. Repair of wall manholes, access hatch, and associated appurtenances
6. Interior tank coating and surface preparation
7. Exterior tank coating and surface preparation
8. Repair and coating of interior tank piping
9. Installation of fall protection system
10. Tank disinfection and testing
11. Final Restoration

In addition to the above, CONTRACTOR shall submit 3-Week Look Ahead schedules whenever Progress Meetings are held.

SP-20 UNUSED

This section has been intentionally left blank.

SP-21 Services of Manufacturers' Representatives

The services of manufacturers' representatives shall be provided on the site as required for the supervision of installation, the adjustment and placing in satisfactory trouble-free operation of the equipment and for providing training to CITY personnel in the operation and maintenance of such equipment.

Such manufacturers' services shall be of sufficient time and shall meet the requirements of the Specifications. Additional time shall be provided if necessary.

The cost of all services of manufacturers' representatives shall be included in the total Lump Sum Price, and no separate payment will be made therefore. Refer also to General Provisions Section G-4.11.

SP-22 Access to Work Area

The CITY's facility is a secure facility. As such, the CONTRACTOR will be obligated to comply with access rules and procedures described herein.

1. Prior to the start of on-site activities, CONTRACTOR must submit a list of employees to the CITY that the CONTRACTOR expects to assign to the project.
2. The above requirement extends to all employees of the Prime CONTRACTOR and all of the CONTRACTOR'S Sub-contractors.
3. The CONTRACTOR shall have a period of five (5) business days following the Notice to Proceed to provide the employee list(s) to the CITY. The list(s) shall include: Employee Name, photo identification, driver license number, race, sex, and date of birth.

4. The CITY reserves the right to reject any employee on the submitted list(s) (Prime and Subs) and may request that the CONTRACTOR submit additional names, if necessary.
5. During the course of the Work, the CITY will require the CONTRACTOR to submit additional names of employees, as needed, who were not on the original list and who are later proposed to work on the project.

SP-23 Storage of Materials

The CONTRACTOR may use the tank property for storage of material and equipment at the specific location(s) identified by the CITY. Payment for use and restoration of storage areas will be included in the lump sum price and no separate payment will be made therefore.

SP-24 Temporary Work Stoppages

The CONTRACTOR shall temporarily discontinue all construction activities from, and including, Thanksgiving Day through the following Sunday, and December 24 through January 2.

If applicable, prior to temporary work stoppages, all streets shall be restored to permit access and to allow ingress and egress by CITY vehicles. The CONTRACTOR shall maintain all streets at this condition level for the duration of the shutdown period.

All equipment, except that used for excavation and well pointing, and all materials including, but not limited to, structures, pipe, and stockpiled material shall be removed to either the CONTRACTOR's storage lot or to a location outside the project area as approved by the ENGINEER.

SP-25 Project Photographs and Video

Before the start of construction, the CONTRACTOR will be required to furnish color photographs and video of the Work site and surrounding area. The CONTRACTOR shall not perform any construction work until the pre-construction photographs and video are taken and submitted to the CITY.

The CONTRACTOR shall submit pre-construction photographs in digital form (JPEG) and video in digital form (MP4) to the CITY prior to the start of construction.

SP-26 Record Drawings

During the course of the Work, the CONTRACTOR shall maintain, at the site, a clean undamaged set of Contract Documents. The CONTRACTOR shall mark the Construction Documents on a daily basis showing the location, progress of the Work, and deviations, if any.

Drawings and specifications book shall be on-site at all times and available for review by the CITY. Failure of CONTRACTOR to have the Contract Documents and/or up to date may result in suspension of the Work until the situation is corrected. Extension of the Contract Time will not be granted for such condition.

At the conclusion of the Work, the CONTRACTOR shall provide the CITY with one complete set of Electronic Record Drawings (AutoCAD DWG) incorporating any changes (an un-marked set of construction drawings will be provided to the CONTRACTOR by the CITY for this purpose).

SP-27 Work Hours

Access to the project site will be permitted Monday through Friday between the hours of 7:00AM and 4:00PM. No work shall be performed outside of these hours or on City of Tampa Holidays without prior permission. If alternative hours are approved, the City reserves the right to reimburse for costs associated with additional internal and third party inspection services.

SP-28 Safety

The CONTRACTOR is solely responsible for the safety of its workers and shall comply with all OSHA requirements pertaining to safety at the site of the Work. All costs associated with safety measures shall be included in the total lump sum contract price, and no separate payment shall be made. Refer also to the Tampa Agreement Article 3.07.

The CONTRACTOR will be responsible for immediately notifying the CITY if a potential or actual event occurs that may be or is threatening the integrity of the tank and/or affecting its operations, and/or threatening the public in any way.

SP-29 Disposal of Debris

The CONTRACTOR shall be solely responsible for removal and proper disposal of debris to locations off of the project site.

SP-30 Pavement Restoration

If applicable, restoration shall conform to standard requirements of CITY and as shown on the Plans.

SP-31 Construction Management Practices

The CONTRACTOR shall submit and obtain concurrence from the CITY on a master list of submittals, which are individually outlined in the contract documents within 7 days of the notice to proceed. The list shall be updated on a weekly basis and presented at each progress meeting via a submittal log. The log should indicate the status of all submittals.

The CONTRACTOR shall provide all submittals within 30 days of the Notice to Proceed.

The CONTRACTOR shall maintain an RFI log for the duration of the project which outlines the content, status, and response of each RFI.

Failure of CONTRACTOR to comply with SP-31 may result in suspension of the Work until the situation is corrected. Extension of the Contract Time will not be granted for such condition.

END OF SPECIFIC PROVISIONS



Page 1 of 2 –DMI Payment
City of Tampa – DMI Sub-(Contractors/Consultants/Suppliers) Payments
(FORM MBD-30)

[] Partial [] Final

Contract No.: _____ WO#, (if any): _____ Contract Name: _____

Contractor Name: _____ Address: _____

Federal ID: _____ Phone: _____ Fax: _____ Email: _____

GC Pay Period: _____ Payment Request/Invoice Number: _____ City Department: _____

Total Amount Requested for pay period: \$ _____ Total Contract Amount (including change orders): \$ _____

Type of Ownership - (F=Female M=Male), BF BM = African Am., HF HM = Hispanic Am., AF AM = Asian Am., NF NM = Native Am., CF CM = Caucasian S = SLBE

Type	Trade/Work Activity	Federal ID	Total Sub Contract Or PO Amount	Amount Paid To Date	Amount To Be Paid For This Period
[] Sub [] Supplier				Amount Pending Previously Reported	Sub Pay Period Ending Date
				\$	\$
				\$	\$
				\$	\$
				\$	\$
				\$	\$
				\$	\$

(Modifying This Form or Failure to Complete and Sign May Result in Non-Compliance)

Certification: I hereby certify that the above information is a true and accurate account of payments to sub – contractors/consultants on this contract.

Signed: _____ Name/Title: _____ Date: _____



Page 2 of 2 – DMI Payment

Instructions for completing The DMI Sub-(Contractors/Consultants/ Suppliers) Payment Form (Form MBD-30)

This form must be submitted with all invoicing or payment requests where there has been subcontracting rendered for the pay period. If applicable, after payment has been made to the subcontractor, “Waiver and Release of Lien upon Progress Payment”, “Affidavit of Contractor in Connection with Final Payment”, or an affidavit of payment must be submitted with the amount paid for the pay period. The following will detail what data is required for this form. The instructions that follow correspond to the headings on the form required to be completed. **(Modifying or omitted information from this form my result in non-compliance).**

- **Contract No.** This is the number assigned by the City of Tampa for the bid or proposal.
- **W.O.#** If the report covers a work order number (W.O.#) for the contract, please indicate it in that space.
- **Contract Name.** This is the name of the contract assigned by the City of Tampa for the bid or proposal.
- **Contractor Name.** The name of your business.
- **Address.** The physical address of your business.
- **Federal ID.** A number assigned to a business for tax reporting purposes.
- **Phone.** Telephone number to contact business.
- **Fax.** Fax number for business.
- **Email.** Provide email address for electronic correspondence.
- **Pay Period.** Provide start and finish dates for pay period. (e.g. 05/01/13 – 05/31/13)
- **Payment Request/Invoice Number.** Provide sequence number for payment requests. (ex. Payment one, write 1 in space, payment three, write 3 in space provided.)
- **City Department.** The City of Tampa department to which the contract pertains.
- **Total Amount Requested for pay period.** Provide all dollars you are expecting to receive for the pay period.
- **Total Contract Amount (including change orders).** Provide expected total contract amount. This includes any change orders that may increase or decrease the original contract amount.
- **Signed/Name/Title/Date.** This is your certification that the information provided on the form is accurate.
- **See attached documents.** Check if you have provided any additional documentation relating to the payment data. Located at the bottom middle of the form.
- **Partial Payment.** Check if the payment period is a partial payment, not a final payment. Located at the top right of the form.
- **Final Payment.** Check if this period is the final payment period. Located at the top right of the form.

The following instructions are for information of any and all subcontractors used for the pay period.

- **(Type) of Ownership.** Indicate the Ethnicity and Gender of the owner of the subcontracting business or SLBE.
- **Trade/Work Activity.** Indicate the trade, service, or material provided by the subcontractor.
- **SubContractor/SubConsultant/Supplier.** Please indicate status of firm on this contract.
- **Federal ID.** A number assigned to a business for tax reporting purposes. This information is critical in proper identification of the subcontractor.
- **Company Name, Address, Phone & Fax.** Provide company information for verification of payments.
- **Total Subcontract Amount.** Provide total amount of subcontract for subcontractor including change orders.
- **Amount Paid To Date.** Indicate all dollars paid to date for the subcontractor.
- **Amount Pending, Previously Reported.** Indicate any amount previously reported that payments are pending.
- **Amount To Be Paid for this Period.** Provide dollar amount of dollars requested for the pay period.
- **Sub Pay Period Ending Date.** Provide date for which subcontractor invoiced performed work.

Forms must be signed and dated or will be considered incomplete. The company authorized representative must sign and certify the information is true and accurate. Failure to sign this document or return the document unsigned can be cause for determining a company is in non-compliance of Ordinance 2008-89.

If any additional information is required or you have any questions, you may call the Minority Business Development Office at (813) 274-5522.

0 1 2 3 4 5 6 7 8

Sign Information

Building a Better Tampa

**David L. Tippin Water Treatment Facility
Caustic Soda Piping Improvements**

Project provides for Improvements at the David L. Tippin Water Treatment Facility to Improve the reliability and safety of the Sodium Hydroxide System of the water distribution system within the facility.

\$TBD investment
Scheduled for completion in TBD 2014

TBD

Colors

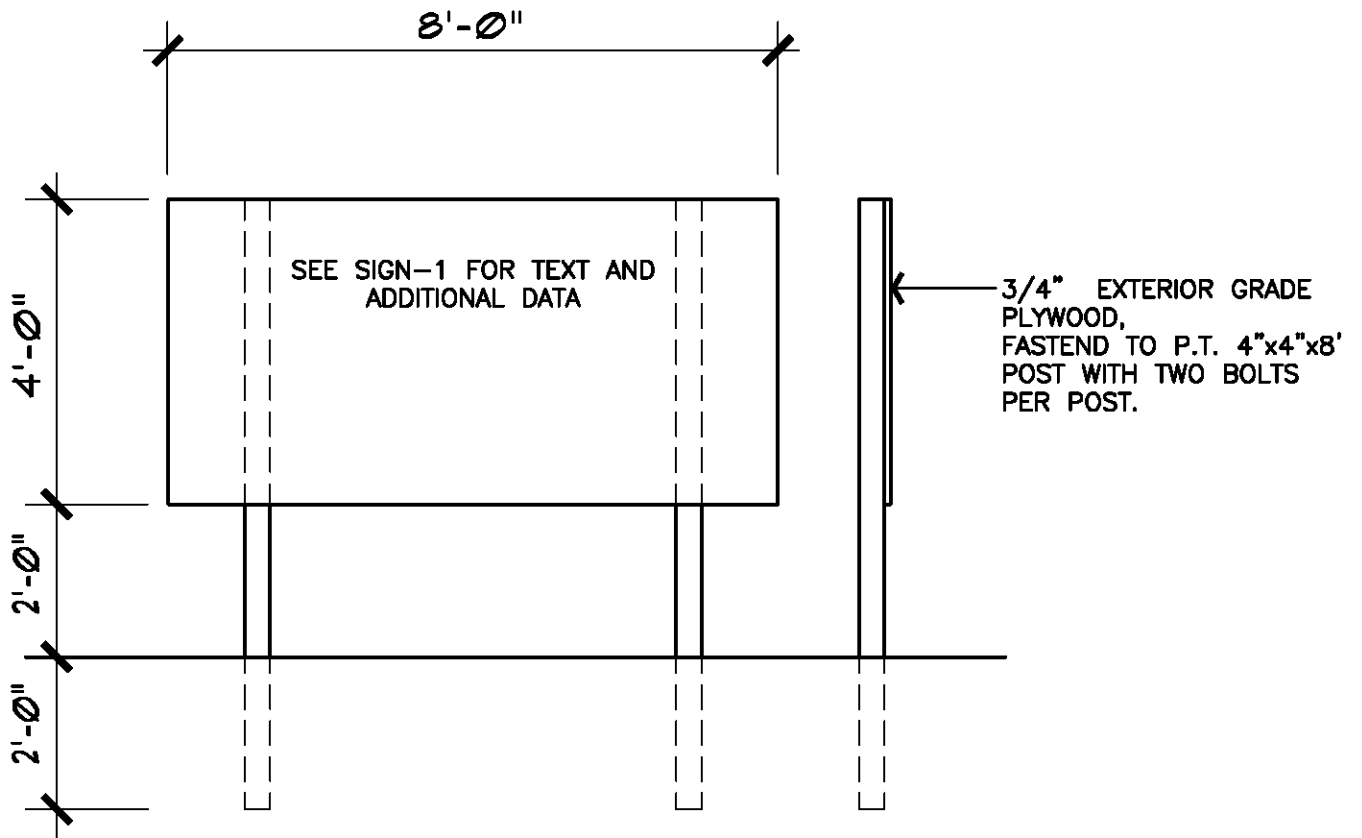
Blue: Sherwin Williams Naval SW6244
Green: Sherwin Williams Center Stage SW 6920
White: Sherwin Williams Pure White SW7005

Font

Franklin Gothic

SIGN EXAMPLE ONLY GRAPHIC TO BE DEVELOPED BY CONTRACTOR

not to scale



SECTION 01010
SUMMARY OF PROJECT

PART 1 - GENERAL

1.01 WORK COVERED BY CONTRACT DOCUMENTS

- A. The contract is for the improvements to the existing three million gallon Northwest Ground Storage Tank as shown on the Drawings and specified herein. Work consists of furnishing all labor, equipment, and materials for the construction of the facilities consisting of but not limited to the following:

1. Base

- a. Repair concrete spalls on tank floor, walls, and dome
- b. Repair concrete cracking on tank floor, walls, and dome
- c. Repair wall manholes, access hatch, and associated appurtenances
- d. Removal of altitude control valve and existing piping, fitting, and supports
- e. Preparation of tank interior and exterior for coating
- f. Furnishing and Installation of coating system (first, second, and third coating) on Northwest GST interior and spot repair (first second, third coating) and top coat on exterior.
- g. Furnish and install 24-inch butterfly valves at Northwest GST
- h. Furnish and install 24-inch plug valve at Northwest GST
- i. Furnish and install Altitude Valve at Northwest GST
- j. Furnish and install tank accessories including fall protection system (including fabricated handrails and fabricated safety ring) and interior ladder at NW GST.
- k. Miscellaneous installation, piping, fittings, and supports.
- l. Tank and piping disinfection
- m. Furnish and install coating (first, second and third coating) on exterior building at Northwest GST and pump discharge piping in the building at Northwest GST.

2. Alternative I

- a. Furnish and install of coating system (prime and first coating) on Northwest GST exterior

1.02 CONTRACTOR'S USE OF PREMISES

- A. The Contractor shall assume full responsibility for the protection and safekeeping of products and materials at the job site. If additional storage or work areas are required, they shall be obtained by the Contractor at no additional cost to the Owner.

1.03 PROJECT SEQUENCE

- A. The Contractor shall establish his work sequence based on the use of crews to facilitate completion of construction and testing within the specified Contract Time, which shall be **120 consecutive calendar days** for the work in the base bid.

1.04 CARE AND PROTECTION OF PROPERTY

- A. The Contractor shall be responsible for the preservation of all public and private property, and shall use every precaution necessary to prevent damage thereto. If any direct or indirect damage is done to public or private property by or on account of any act, omission, neglect, or misconduct in the execution of the Work on the part of the Contractor, such property shall be restored by the Contractor, at his expense, to a condition similar or equal to that existing before the damage was done, or he shall make good the damage in other manner acceptable to the Engineer.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

**SECTION 01014
SEQUENCE OF CONSTRUCTION**

PART 1 - GENERAL

1.01 GENERAL CONSTRUCTION SEQUENCE REQUIREMENTS

- A. All work shall be performed to minimize the effect of the construction on the Owner's continuous operation of the existing facilities and shall be closely coordinated with Owner personnel. Do not close lines, open or close valves, or take other action which would affect the operation of existing systems, except as specifically required by the Contract Documents and after authorization by Owner. Such authorization will be considered within 48 hours after receipt of Contractor's written request. Do not proceed with Work affecting a facility's operation without obtaining in writing the Owner's advance approval of the need for and duration of such Work.
- B. Temporary valve, piping, pumping and other equipment shall be provided to allow for yard piping additions and conversion of existing piping to accommodate new facilities construction and start-up / testing.
- C. The Contractor shall make all efforts to minimize the downtime of the Ground Storage Tanks when performing the specified work.
- D. Substantial completion may be obtained after all operating contractual conditions are satisfied and the facilities can continuously distribute flow at appropriate pressures approved with all necessary regulatory approvals. Final completion of the project shall only be achieved after all project work, including those items allowed after substantial completion, is accepted by the Owner and all work approved as final.
- E. Contractor shall prepare detailed sequence of work and it shall be included as a part of the required Progress Schedule. Shutdown periods longer than 4 hours per day shall only be allowed with prior approval of the Owner.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

**SECTION 01025
MEASUREMENT AND PAYMENT**

PART 1 - GENERAL

1.01 DESCRIPTION

- A. The total Bid Price shall cover all Work required by the Contract Documents. All costs in connection with the proper and successful completion of the Work, including furnishing all materials, equipment, supplies, and appurtenances; providing all construction equipment and tools; and performing all necessary labor and supervision to fully complete the Work, shall be included in the lump sum bid. All Work not specifically set forth as a pay item in the Bid Form shall be considered a subsidiary obligation of Contractor and all costs in connection therewith shall be included in the prices bid.
- B. The Contractor shall receive and accept the compensation provided in the Proposal and the Contract as full payment for furnishing all materials, labor, tools and equipment, for performing all operations necessary to complete the work under the Contract, and also in full payment for all loss or damages arising from the nature of the work, or from any discrepancy between the actual quantities of work and quantities herein estimated by the Engineer, or from the action of the elements of from any unforeseen difficulties which may be encountered during the prosecution of the work until the final acceptance by the Owner.
- C. The prices stated in the proposal include all costs and expenses for taxes, labor, equipment, materials, commissions, transportation charges and expenses, patent fees and royalties, labor for handling materials during inspection, together with any and all other costs and expenses for performing and completing the work as shown on the Drawings and specified herein.
- D. The Contractor's attention is again called to the fact that the quotations for the various items of work are intended to establish a total price for completing the work in its entirety. Should the Contractor feel that the cost for any item of work has not been established by the Bid Form or Payment Items, he shall include the cost for that work in some other applicable bid item, so that his proposal for the project does reflect his total price for completing the work in its entirety.

1.02 PAYMENT

- A. Payment will be made at the lump sum price for each of the items shown in the Bid Proposal, installed and accepted, which price and payment shall constitute full compensation for furnishing all materials and performing all Work in connection therewith and incidental thereto.

1.03 TAXES AND PERMITS

- A. The Bidder's attention is directed to the fact that the tax laws of the State of Florida, including but not limited to Chapter 212, Florida Statutes, apply to this bid matter and

that all applicable taxes and fees shall be deemed to have been included in Bidder's Proposal. The Contractor shall be responsible for all permits and permit fees necessary for construction, including those beyond what were previously obtained by the Owner.

1.04 MEASUREMENT AND PAYMENT

A. The following are included the base bid:

1. General Conditions (Bid Item No. 1):

- a. Basis of Measurement: The lump sum amount for this item shall be for furnishing all labor, materials and equipment necessary to complete the tasks associated with General Conditions in this Contract.
- b. Basis of Payment: The General Conditions shall be paid for at the contract lump sum price set out in the Proposal, which constitutes full compensation for all the work described herein.

2. Mobilization/Demobilization (Bid Item No. 2):

- a. Basis of Measurement: The lump sum amount for this item shall include costs associated with preparatory work and operations necessary to begin the piping modifications and rehabilitation of the Northwest GST, including but not limited to, those operations necessary for the movement of personnel, equipment, supplies, and incidentals to the project site, pre-construction video and construction photography, safety equipment, first aid supplies, and all applicable federal, state, and local laws and regulations as required for the proper performance and completion of the work.
- b. Basis of Payment: The described items shall be paid for at the contract lump sum price set out in the Proposal, which constitutes full compensation for all the work described herein in accordance with the following schedule:

Percent of Original Contract Amount <u>Earned</u>	Allowable Percent of the Lump Sum <u>Price for mobilization</u>
5	25
10	50
25	75
50	100

3. Permitting, Bonds, and Insurance (Bid Item No. 3)

- a. Basis of Measurement: The lump sum amount for this item shall be full compensation for furnishing all labor, materials, equipment, and services necessary to provide bonds, insurance, and permits for the work.

- b. Basis of Payment: The provision of permits, bonds, and insurance shall be paid for at the contract lump sum price set out in the Proposal, which constitutes full compensation for all the work described herein.
- 4. Investigation Beneath Tank Floor (Bid Item No. 4):
 - a. Basis of Measurement: The lump sum Bid Price for investigation beneath the tank floor shall be for furnishing all labor, materials and equipment necessary to investigate beneath the tank floors at the Northwest GST.
 - b. Basis of Payment: The pay item for investigation beneath the tank floor shall be paid for at the contract lump sum price set out in the Proposal, which price and payment constitutes full compensation for all the work described herein.
- 5. Repair Concrete Spalls at Base Interior of Wall (Bid Item No. 5):
 - a. Basis of Measurement: This bid item includes all labor, materials and equipment necessary for repairing the concrete spalls at the base interior of the tank walls on the Northwest GST. The quantity of repaired concrete spalls shall be measured in square feet.
 - b. Basis of Payment: Payment will be for each square foot of concrete spall repaired, as set forth in the Proposal. The unit bid price includes the furnishing of all labor, equipment and material necessary for completion of concrete spall repair at the base interior of the tank wall.
- 6. Repair Concrete Spalls on Interior Tank Dome (Bid Item No. 6):
 - a. Basis of Measurement: This bid item includes all labor, materials and equipment necessary for repairing the concrete spalls on the interior tank domes on the Northwest GST. The quantity of repaired concrete spalls shall be measured in square feet.
 - b. Basis of Payment: Payment will be for each square foot of concrete spall repaired, as set forth in the Proposal. The unit bid price includes the furnishing of all labor, equipment and material necessary for completion of concrete spall repair on the interior tank dome.
- 7. Repair Concrete Cracks on Interior Tank Dome (Bid Item No. 7):
 - a. Basis of Measurement: This bid item includes all labor, materials and equipment necessary for repairing the concrete spalls on the exterior tank domes on the Northwest GST. The quantity of repaired concrete spalls shall be measured in linear feet.
 - b. Basis of Payment: Payment will be for each linear foot of repaired concrete spall, as set forth in the Proposal. The unit bid price includes the furnishing of all labor, equipment and material necessary for completion of concrete spall repair on the exterior tank dome.
- 8. Repair Concrete Cracks on Exterior Tank Dome (Bid Item No. 8):
 - a. Basis of Measurement: This bid item includes all labor, materials and equipment necessary for repairing the concrete cracks on the exterior

tank domes on the Northwest GST. The quantity of repaired concrete cracks shall be measured in linear feet.

- b. Basis of Payment: Payment will be for each linear foot of repaired concrete crack, as set forth in the Proposal. The unit bid price includes the furnishing of all labor, equipment and material necessary for completion of concrete crack repair on the exterior tank dome.
9. Repair Concrete Spalls at Exterior of Tank Wall (Bid Item No. 9):
 - a. Basis of Measurement: This bid item includes all labor, materials and equipment necessary for repairing the concrete spalls on the exterior of the tank walls at the Northwest GST. The quantity of repaired concrete spalls shall be measured in square feet.
 - b. Basis of Payment: Payment will be for each square foot of concrete spall repaired, as set forth in the Proposal. The unit bid price includes the furnishing of all labor, equipment and material necessary for completion of concrete spall repair on the exterior of the tank wall.
 10. Repair Wall Manhole (Bid Item No. 10):
 - a. Basis of Measurement: The lump sum Bid Price for repair of one (1) wall manhole Northwest GST and shall be for furnishing all labor, materials and equipment necessary.
 - b. Basis of Payment: The pay item for the repair of one (1) wall manholes shall be paid for at the contract lump sum price set out in the Proposal, which price and payment constitutes full compensation for all the work described herein.
 11. Repair Interior Tank Piping (Bid Item No. 11):
 - a. Basis of Measurement: The lump sum Bid Price for the preparation and coating of the 12-inch DIP, 24" DIP Influent, 24" DIP effluent, 12" DI overflow pipe, three 1" pipes, and ½" pipe at Northwest GST and shall be for furnishing all labor, materials and equipment necessary to coat the DI.
 - b. Basis of Payment: The pay item for the preparation and coating of the pipe shall be paid for at the contract lump sum price set out in the Proposal, which price and payment constitutes full compensation for all the work described herein.
 12. Replace Hardware on Dome Access Hatch Curb (Bid Item No. 12):
 - a. Basis of Measurement: The lump sum Bid Price for replacement of hardware on the dome access hatch curb on the Northwest GST shall be for furnishing all labor, materials and equipment necessary to replace the hardware.
 - b. Basis of Payment: The pay item for replacement of hardware on the dome access hatch curb shall be paid for at the contract lump sum price set out in the Proposal, which price and payment constitutes full compensation for all the work described herein.

13. Repair Cracking on Dome Access Hatch Curb (Bid Item No. 13)
 - a. Basis of Measurement: The lump sum Bid Price to repair cracking on the dome access hatch curb on the Northwest GST shall be for furnishing all labor, materials and equipment necessary to repair the curb.
 - b. Basis of Payment: The pay item for to repair cracking on the dome access hatch curb shall be paid for at the contract lump sum price set out in the Proposal, which price and payment constitutes full compensation for all the work described herein.
14. Repair Cracking on Dome Center Vent Curb (Bid Item No. 14)
 - a. Basis of Measurement: The lump sum Bid Price to repair cracking on the dome center vent curb on the Northwest GST shall be for furnishing all labor, materials and equipment necessary to repair the curb.
 - b. Basis of Payment: The pay item for to repair cracking on the dome center vent curb shall be paid for at the contract lump sum price set out in the Proposal, which price and payment constitutes full compensation for all the work described herein.
15. Repair Concrete Spalls on Overflow Opening (Bid Item No. 15):
 - a. Basis of Measurement: The lump sum Bid Price for repair of the concrete spalls on the overflow vent on the Northwest GST shall be for furnishing all labor, materials and equipment necessary to make the repairs.
 - b. Basis of Payment: The pay item for the repair of the concrete spall screens on the overflow vent shall be paid for at the contract lump sum price set out in the Proposal, which price and payment constitutes full compensation for all the work described herein.
16. Disinfection and Testing (Bid Item No. 16):
 - a. Basis of Measurement: The lump sum Bid Price for yard piping and tank disinfection and testing shall be for furnishing all labor, materials and equipment necessary to disinfect the piping and tank at the completion of the rehabilitation, prior to placing the tanks and associated yard piping back into service.
 - b. Basis of Payment: The disinfection of the tanks and yard piping shall be paid for at the contract lump sum price set out in the Proposal, which constitutes full compensation for all the work described herein.
17. Prepare Tank Interior for Walls, Floor and Ceiling (Bid Item No. 17):
 - a. Basis of Measurement: This bid item includes all labor, materials and equipment necessary for preparing the tank interior at the Northwest GST including the walls, floor, ceiling, and any other items not covered in bid items 1-16. The quantity of tank interior prepared shall be measured in square feet.

- b. Basis of Payment: Payment will be for each square foot of prepared tank interior, as set forth in the Proposal. The unit bid price includes the furnishing of all labor, equipment and material necessary for completion of tank interior preparation.
- 18. Prime, First and Second Coat on Tank Interior Walls, Floor and Ceiling (Bid Item No. 18):
 - a. Basis of Measurement: This bid item includes all labor, materials and equipment necessary for priming and painting the first and second coat of paint to the tank interior walls, floor, and ceiling and any other items not covered in bid items Northwest GST. The quantity of tank interior painted shall be measured in square feet.
 - b. Basis of Payment: Payment will be for each square foot of tank interior primed and painted with two coats of paint, as set forth in the Proposal. The unit bid price includes the furnishing of all labor, equipment and material necessary for completion of tank interior priming and painting.
- 19. Prime, First, and Second Coat Tank Exterior for Spot Coating Repairs (Bid Item No. 19)
 - a. Basis of Measurement: This bid item includes all labor, materials and equipment necessary for priming and painting the first and second coat of paint spot repairs to the tank exterior for the Northwest GST. The quantity of tank exterior spot repairs painted and completed shall be measured in square feet.
 - b. Basis of Payment: Payment will be for each square foot of tank exterior primed and painted with two coats of paint, as set forth in the Proposal. The unit bid price includes the furnishing of all labor, equipment and material necessary for completion of tank exterior priming and painting.
- 20. Prepare and Apply Single Top Coat Tank Exterior at Northwest GST (Bid Item No. 20)
 - a. Basis of Measurement: This bid item includes all labor, materials and equipment necessary for pressure washing and applying a single top coat to the Northwest GST. The quantity shall be measured in square feet.
 - b. Basis of Payment: Payment will be for each square foot of prepared and single top coated as set forth in the Proposal. The unit bid price includes the furnishing of all labor, equipment and material necessary for preparing, pressure washing, and coating the exterior of the Northwest GST.
- 21. Prepare, Crack Repair, Prime, First & Second, and Finish Coat of the Exterior Northwest GST Building and Piping within and outside of the Building (Bid Item No. 21)

- a. Basis of Measurement: This bid item includes all labor, materials and equipment necessary for preparing and painting the building exterior for the pump building at the Northwest GST site and tank discharge piping between and within the building at Northwest GST. Preparation shall include any necessary crack repairs. The quantity of building exterior and piping prepared and coated with one prime and two topcoats shall be measured in square feet.
 - b. Basis of Payment: Payment will be for each square foot of prepared and coated building exterior and pump discharge piping, as set forth in the Proposal. The unit bid price includes the furnishing of all labor, equipment and material necessary for completion of building repair, coating, and pipe coatings.
22. Concrete Pad Removal and Replacement (Bid Item No. 22)
- a. Basis of Measurement: The lump sum bid price for concrete pad removal and replacement includes all labor, materials and equipment necessary to remove the existing reinforced concrete pad supporting the existing altitude valve, and replace with pad as proposed in the Plans.
 - b. Basis of Payment: This item shall constitute full compensation for all labor, materials and equipment for to remove the existing reinforced concrete pad supporting the existing altitude valve, and replace with pad as proposed in the plans, preparation of the surface, cast in place formwork, rebar and metal mesh, expansion joints, disposal of existing concrete and waste, material testing and incidental work as shown on the Contract Drawings and as specified.
23. Removal and Replacement of 20-inch Butterfly Valves, Installation of Dismantling Joint and Spool Pieces (Bid Item No. 23)
- a. Basis of Measurement: The lump sum Bid Price for removal of existing two (2) 24-inch above-grade butterfly valves and reducers, and above grade piping & appurtenances, and installation of one (1) 24-inch above-grade butterfly valves, one (1) 20-inch above grade plug valve, pipe spool pieces, pipe fittings, pipe supports, and coatings, and shall be for furnishing all labor, materials and equipment necessary.
 - b. Basis of Payment: The removal of existing two (2) 24-inch butterfly valves and piping, and installation of two (2) 24-inch butterfly valves, 24-inch spool pieces, 24-inch dismantling joint, pipe supports, and coatings, and shall be paid for at the contract lump sum price set out in the Proposal, which constitutes full compensation for all the work described herein.
24. Removal of Existing Altitude Valve and Installation of New Altitude Valve (Bid Item No. 24):

- a. Basis of Measurement: The lump sum Bid Price for removal of one (1) 20-inch altitude valve and replacement with one (1) 16-inch altitude valve and shall be for furnishing all labor, materials and equipment necessary.
 - b. Basis of Payment: The one (1) 20-inch altitude valve removal and replacement with one (1) 16-inch altitude valve and shall be paid for at the contract lump sum price set out in the Proposal, which constitutes full compensation for all the work described herein.
25. Installation of Tank Accessories (Bid Item No. 25)
- a. Basis of Measurement: The lump sum Bid Price for the installation of tank accessories as defined in the drawings and specifications including (1) GST fall protection system at Northwest GST and one (1) interior ladder at the Northwest GST and shall be for furnishing all necessary labor, materials, and equipment necessary to complete the bid item.
 - b. Basis of Payment: The installation of (1) GST fall protection system at Northwest GST, and one (1) interior ladder piping shall be paid for at the contract lump sum price set out in the Proposal, which constitutes full compensation for all the work described herein.
26. Furnish and Install Electrical and I&C (Bid Item No. 26)
- a. Measurement: Measurement for this lump sum item will be based on the percentage of the total value of the work performed to install all electrical and I&C parts, conduit, wiring, and connections, satisfactorily furnished, installed, and shall include all related work required to successfully provide and install / complete electrical work.
 - b. Payment: Payment of the appropriate percentage of the lump sum price shall be full compensation for furnishing all labor, materials, design and equipment to construct/install panels, wiring, conduit, connections, terminals, power transformer and all other appurtenances as necessary to accomplish the work as shown on the Drawings and specified in the Contract Documents.
27. Owner's Contingency
- a. Basis of Measurement: Measurement for this as needed item will be made for in accordance with any Change Order authorized by the Owner. The allowance is for extra work specifically authorized by the Owner and has been predefined by the Owner. Compensation will be determined in accordance with any Change Order provision of the General Conditions. Compensation shall be deducted from the contingency allowance as authorized by the Owner.
 - b. Basis of Payment: Payment from the Owner's Contingency shall be made for only after authorization of the Owner in accordance with any Change Order provisions.

B. Bid Alternatives:

1. Additional Prime and First Coat Exterior Tank Coating (Alternative Bid Item No. 1.)
 - a. Basis of Measurement: This bid item includes all labor, materials, and equipment necessary for the additional coating on the exterior tank (prime and first coat) for the Northwest GST. This bid item shall only be used and approved at the discretion of the City. The quantity of tank exterior coated shall be per square feet.
 - b. Basis of Payment: Payment will be for the actual quantity prepared, primed, and first coat of the tank exterior, as set forth in the Proposal. The unit bid price includes the furnishing of all labor, equipment and material necessary for completion of tank exterior preparation and coating. The top coat shall be included in Bid Item No. 20.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01027
APPLICATIONS FOR PAYMENTS

PART 1 - GENERAL

1.01 PAY REQUEST SUBMISSION

- A. Submit applications for payment to the Engineer in accordance with the schedule established by General Conditions of the Contract between the Owner and Contractor.

1.02 FORMAT AND DATA REQUIRED

- A. Submit applications typed on forms provided by the Owner, with itemized data typed on 8-1/2 inch x 11 inch or 8-1/2 inch x 14 inch white paper continuation sheets.
- B. Provide itemized data on continuation sheet of format, schedules, line items and values: Those of the schedule of values accepted by the Engineer.

1.03 PREPARATION OF APPLICATION FOR EACH PROGRESS PAYMENT

A. Application Form:

- 1. Fill in required information, including that for Change Orders executed prior to date of submittal of application.
- 2. Fill in summary of dollar values to agree with respective totals indicated on continuation sheets.
- 3. Execute certification with signature of a responsible officer of Contract firm.

B. Continuation Sheets:

- 1. Fill in total list of all scheduled component items of work, with item number and scheduled dollar value for each item.
- 2. Fill in dollar value in each column for each scheduled line item when work has been performed or products stored. Round off values to nearest dollar, or as specified for Schedule of Values.
- 3. List each Change Order executed prior to date of submission, at the end of the continuation sheets. List by Change Order Number, and description, as for an original component item of work.
- 4. To receive approval for payment on component material stored on site, submit copies of the original paid invoices with the application for payment. Any materials stored on site that are included in the pay request must be installed prior to the next pay request submitted.

5. As provided for in the "Pay Estimate" form, the Contractor shall certify, for each current pay request, that all previous progress payment received from the Owner, under this Contract, have been applied by the Contractor to discharge in full all obligations of the Contractor in connection with Work covered by prior Applications for Payment, and all materials and equipment incorporated into the Work are free and clear of all liens, claims, security interest and encumbrances. Contractor shall attach to each Application for Payment like affidavits by all Subcontractors.

1.04 SUBSTANTIATING DATA FOR PROGRESS PAYMENTS

- A. When the Owner or the Engineer requires substantiating data, Contractor shall submit suitable information, with a cover letter identifying:
 1. Project.
 2. Application number and date.
 3. Detailed list of enclosures.
 4. For stored products:
 - a. Item number and identification as shown on application.
 - b. Description of specific material.
- B. Submit one copy of data and cover letter for each copy of application.
- C. As a prerequisite for payment, Contractor is to submit a "Surety Acknowledgement of Payment Request" letter showing amount of progress payment which the Contractor is requesting.
- D. The Contractor is to maintain an updated set of drawings to be used as record drawings in accordance with Section 01720. As a prerequisite for monthly progress payments, the Contractor is to exhibit the updated record drawings for review by the Owner and the Engineer.

1.05 PREPARATION OF APPLICATION FOR FINAL PAYMENT

- A. Fill in Application form as specified for progress payments.

1.06 SUBMITTAL PROCEDURE

- A. Submit Applications for Payment to the Engineer at the time stipulated in the Agreement.
- B. Number of copies for each Application for Payment:
 1. Owner: Five (5) copies
 2. Engineer: One (1) copy

3. Contractor: As required for his needs
- C. When the Engineer finds Application properly completed and correct, he will transmit certificate for payment to Owner, with copy for Contractor.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

**SECTION 01038
REQUESTS FOR INFORMATION**

PART 1 - GENERAL

1.01 DESCRIPTION OF REQUIREMENTS

- A. This Section specifies the general methods and requirements of Requests for Information (RFIs).

1.02 RELATED WORK

- A. Submittals are included in Section 01340
- B. Project Record Documents are included in Section 01720.

1.03 REQUESTS FOR INFORMATION

- A. When the CONTRACTOR believes that additional information or clarification of a contract requirement is needed, it may initiate a Request for Information
- B. RFIs may relate to Technical matters or Administrative matters. The RFI process shall be limited to the clarification of technical and/or administrative matters. While the response to an RFI might lead to a change in the contract scope, cost or time, RFIs are not a substitute to the notification requirements stipulated in the Contract.
- C. A response to an RFI may authorize minor changes to the contract consistent with the terms of the contract related to the responsibilities and limitations of authority of the Engineer.
- D. A response to an RFI is not an authorization to perform any additional work that would require a change order or written amendment to the contract. If the Contractor believes the response to an RFI requires a change to the contract, Contractor shall promptly provide written notice to the Owner and Engineer in accordance with the Contract.
- E. RFIs are not a substitute for the Submittals process specified elsewhere.

PART 2 - PRODUCTS – NOT USED

PART 3 - EXECUTION

3.01 ORIGINATION

- A. The Contactor shall originate RFIs.
 - 1. RFIs shall be numbered consecutively. In the event that an answered RFI results in a follow-up inquiry, the follow-up shall maintain the same number as the original, appended with a suffix.
 - 2. Include Specification Section(s), Drawing(s), or detail(s) for which information is requested.

3. Attach drawings, sketches, photographs or other relevant information.
 4. If the question concerns an interpretation of the Contract Documents, enter the Contractor's interpretation.
 5. Indicate the date by which the Contractor requests a reply.
 6. Sign the upper portion of the form.
- B. RFIs may not be submitted by subcontractors or suppliers. When a subcontractor or supplier generates a request for information or clarification to the Contractor, Contractor shall incorporate such requests into the required format, assign the next RFI number, sign, and submit.
- C. Contractor shall maintain a log of all RFIs including the date originated, date delivered, and date answered.

3.02 PROCESSING

- A. Contractor shall submit all RFIs to the ENGINEER for processing.
- B. Technical RFIs will generally be reviewed and answered by the respective discipline engineer or architect.
- C. Administrative RFIs will generally be reviewed and answered by the Engineer in consultation with the OWNER.
- D. The Engineer will generally respond to RFIs within seven calendar days of receipt – depending on the complexity of the inquiry.

3.03 RESPONSES

- A. If the RFI contains sufficient clarity, the Engineer will insert a response in the lower portion of the RFI form, sign and date the response; and, return the completed form to the Contractor.
- B. If the RFI does not contain sufficient clarity, the Engineer may request additional information from the Contractor.
- C. Engineer will distribute copies to the Owner and project files.
- D. Engineer will maintain a log of all RFIs including the date received and date returned to Contractor.

3.04 RECORD INFORMATION

- A. Contractor shall include all clarifications obtained through the RFI process into the record information in accordance with Section 01720.

END OF SECTION

**SECTION 01070
ABBREVIATIONS**

PART 1 - GENERAL

1.01 STANDARDS AND ABBREVIATIONS

- A. Referenced Standards: Any reference to published specifications or standards of any organization or association shall comply with the requirements of the specification or standard which is current on the date of Advertisement for Bids. In case of a conflict between the referenced specifications or standards, the one having the more stringent requirements shall govern.

In case of conflict between the referenced specifications or standards and the Contract Documents, the Contract Documents shall govern.

- B. Abbreviations:

AA	Aluminum Association
AAA	American Arbitration Association
AABC	Associated Air Balance Council
AAMA	Architectural Aluminum Manufacturers Association
AASHO	The American Association of State Highway Officials
ABA	American Bar Association
ABMA	American Boiler Manufacturers Association
ABPA	Acoustical and Board Products Association
ACI	American Concrete Institute
ACPA	American Concrete Pipe Association
AEIC	Association of Edison Illuminating Companies
AFBMA	Anti-Friction Bearing Manufacturers Association
AGA	American Gas Association
AGC	Associated General Contractors of America
AGMA	American Gear Manufacturers Association
AHA	American Hardboard Association
AI	The Asphalt Institute
AIA	American Institute of Architects
AIA	American Insurance Association
AIEE	American Institute of Electrical Engineers (Now IEEE)
AIMA	Acoustical and Insulating Materials Association
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
AITC	American Institute of Timber Construction
AMCA	Air Moving and Condition Association
ANSI	American National Standard Institute
APA	American Plywood Association

API	American Petroleum Institute
APWA	American Public Works Association
AREA	American Railway Engineering Association
ARI	American Refrigeration Institute
ASA	American Standards Association (Now ANSI)
ASAHC	American Society of Architectural Hardware Consultants
ASCE	American Society of Civil Engineers
ASHRAE	American Society of Heating, Refrigerating and Air Conditioning Engineers
ASME	American Society of Mechanical Engineers
ASSCBC	American Standard Safety Code for Building Construction
ASSHTO	American Association of State Highway Transportation Officials
ASTM	American Society for Testing and Materials
AWG	American Wire Gauge
AWI	Architectural Woodwork Institute
AWPA	American Wood Preservers Association
AWPB	American Wood Preservers Bureau
AWPI	American Wood Preservers Institute
AWS	American Welding Society
AWWA	American Water Works Association
BHMA	Builders Hardware Manufacturers Association
BIA	Brick Institute of America (formerly SCPI)
CDA	Copper Development Association
CFS	Cubic Feet Per Second
CMAA	Crane Manufacturers Association of America
CRSI	Concrete Reinforcing Steel Institute
CS	Commercial Standard
DHI	Door and Hardware Institute
DIPRA	Ductile Iron Pipe Research Association
DOT Spec	Standard Specification for Road and Bridge Construction Florida Department of Transportation, 1982
E/A	Engineer and/or Architect
EDA	Economic Development Association
EEI	Edison Electric Institute
EPA	Environmental Protection Agency
FCI	Fluid Control Institute
FDEP	Florida Department of Environmental Protection
FDOT	Florida Department of Transportation
Fed Spec	Federal Specification
FPS	Feet Per Second
FS	Federal Standards
GPM	Gallons Per Minute
HMI	Hoist Manufacturers Institute
HP	Horsepower
HSBII	Hartford Steam Boiler Inspection and Insurance Co.
ID	Inside Diameter

IEEE	Institute of Electrical and Electronic Engineers
IFI	Industrial Fasteners Institute
IPCEA	Insulated Power Cable Engineers Association
IPS	Iron Pipe Size
MGD	Million Gallons Per Day
MHI	Materials Handling Institute
MMA	Monorail Manufacturers Association
NBFU	National Board of Fire Underwriters
NBHA	National Builders' Hardware Association
NBS	National Bureau of Standards
NCSA	National Crushed Stone Association
NCSPA	National Corrugated Steel Pipe Association
NEC	National Electrical Code
NECA	National Electrical Contractors' Association
NEMA	National Electrical Manufacturers' Association
NFPA	National Fire Protection Association
NLA	National Lime Association
NPC	National Plumbing Code
NPT	National Pipe Threads
NSC	National Safety Council
NSF	National Sanitation Foundation
OD	Outside Diameter
OSHA	U.S. Department of Labor, Occupational Safety and Health Act
PCA	Portland Cement Association
PCI	Prestressed Concrete Institute
PS	United States Products Standards
PSI	Pounds per Square Inch
PSIA	Pounds per Square Inch Absolute
PSIG	Pounds per Square Inch Gauge
RAS	Return Activated Sludge
RPM	Revolutions Per Minute
RPR	Resident Project Representative
SAE	Society of Automotive Engineers
SDI	Steel Decks Institute
SJI	Steel Joists Institute
SWFWMD	South West Florida Water Management District
SMACNA	Sheet Metal and Air Conditioning Contractors' National Association
SSI	Scaffolding and Shoring Institute
SSPC	Steel Structures Painting Council
SSPC	Structural Steel Painting Council
STA	Station (100 feet)
TDH	Total Dynamic Head
TH	Total Head
UBC	Uniform Building Code
UL	Underwriter's Laboratories, Inc.

USASI or United States of America Standards Institute
WAS Waste Activated Sludge

C. Additional abbreviations and symbols are shown on the Drawings.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

**SECTION 01200
PROJECT MEETINGS**

PART 1 - GENERAL

1.01 DESCRIPTION

A. Scope of Work:

1. The Contractor shall cooperate and coordinate with the Engineer to schedule and administer the preconstruction meeting, monthly progress meetings, and specifically called meetings throughout the progress of the Work. The Contractor shall:
 - a. Prepare agenda for meetings.
 - b. Make physical arrangements for meetings.
 - c. Preside at meetings.
 - d. Take and distribute meeting minutes.
2. Representatives of Contractor, subcontractors, and suppliers attending meetings shall be qualified and authorized to act on behalf of the entity each represents.
3. The Owner shall attend meetings to ascertain that the Work is expedited consistent with Contract Documents and construction schedules.
4. The Contractor shall record the preconstruction meeting and each progress meeting in its entirety, and shall provide the Engineer with a regular electronic copy of such recording, having good quality and clarity, and a typed transcript of the minutes of each meeting. A copy of the minutes of each progress meeting shall be available five (5) business days after the meeting.

B. Related Requirements Described Elsewhere:

1. Construction Progress Schedules: Section 01310.
2. Project Record Documents: Section 01720.

1.02 PRECONSTRUCTION MEETING

- A. The Contractor will schedule a preconstruction meeting no later than fourteen (14) days after date of Notice to Proceed. The meeting shall be scheduled at the convenience of all parties.
- B. Location: Project Site, 5600 W Sitka St. Tampa, FL 33614, unless specified otherwise by the Engineer or the Owner.
- C. Attendance:
 1. Owner's representative.

2. Engineer and his professional consultants.
 3. Resident project representative.
 4. Contractor and his superintendent.
 5. Major subcontractors.
 6. Representatives of major suppliers and manufacturers as appropriate.
 7. Governmental and Utilities representatives as appropriate.
 8. Others as requested by the Contractor, Owner, and Engineer.
- D. The Engineer shall preside at the preconstruction meeting. The Contractor shall provide for keeping minutes and distribution of minutes to the Owner, Engineer and others. The purpose of the preconstruction meeting is to designate responsible personnel and establish a working relationship. Matters requiring coordination will be discussed and procedures for handling such matters established.
- E. The suggested agenda for the preconstruction meeting would include the following:
1. Distribution and discussion of:
 - a. List of major subcontractors and suppliers.
 - b. Projected schedules.
 - c. Schedule of Values.
 2. Critical work sequencing: Relationships and coordination with other contracts and/or work and continuing water pump plant operation.
 3. Major equipment deliveries and priorities.
 4. Project coordination: Designation and responsible personnel.
 5. Procedures and processing of:
 - a. Field decisions.
 - b. Proposal requests.
 - c. Request for Information.
 - d. Submittals.
 - e. Change Orders.
 - f. Applications for Payment.
 6. Submittal of Shop Drawings, project data and samples.
 7. Adequacy of distribution of Contract Documents.
 8. Procedures for maintaining Record Documents
 9. Use of premises:
 - a. Office, work, and storage areas.
 - b. Owner's requirements.
 - c. Access and traffic control.

10. Construction facilities, controls, and construction aids.
11. Temporary utilities.
12. Safety and first aid procedures.
13. Check of required Bond and Insurance certifications.
14. Completion time for contract and liquidated damages.
15. Request for extension of Contract Time.
16. Procedures for periodic monthly (or whatever interval is deemed appropriate or necessary, however, a minimum of monthly meetings will be required) progress meetings, for all involved.
17. Security procedures.
18. Procedures for making partial payments.
19. Guarantees on completed work.
20. Equipment to be used.
21. Project layout and staking of work.
22. Project inspection.
23. Labor requirements.
24. Laboratory testing of material requirements.
25. Provisions for material stored on site and monthly inventory of materials stored.
26. Requirements of other organizations such as utilities, highway departments, building departments.
27. Rights-of-way and easements.
28. Housekeeping procedures.
29. Liquidated damages.
30. Posting of signs and installation of Project Sign.
31. Pay request submittal dates.
32. Equal opportunity requirements.

1.03 WEEKLY PROGRESS MEETINGS

- A. The Contractor shall schedule regular weekly onsite meetings. The progress meetings will be held a minimum of once every seven (7) days and at other times as required by the progress of the Work. The first meeting shall be held within thirty (30) days after Notice to Proceed.
- B. Hold called meetings as required by progress of the Work.

- C. Location of the meetings: Project Site, 5600 W Sitka St. Tampa, FL 33614 (The City reserves the right to modify the location of meetings).
- D. Attendance:
1. Engineer and his professional Subconsultants as needed.
 2. Resident Project Representative.
 3. Contractor and his Superintendent.
 4. Owner's representatives.
 5. Subcontractors (active on the site, as appropriate to the agenda).
 6. Others as appropriate to the agenda (suppliers, manufacturers, other subcontractors, etc.).
- E. The Contractor shall preside at the meetings and provide for keeping minutes and distribution of the minutes to the Owner, Engineer, and others within five (5) days of the meeting. The purpose of the meetings will be to review the progress of the Work.
- F. The suggested agenda for the progress meetings will include but not be limited to the following:
1. Review approval of minutes of previous meeting.
 2. Review of Work progress since previous meeting and Work scheduled (3-week look ahead schedule).
 3. Field observations, problems, conflicts.
 4. Problems which impede construction schedule.
 5. Review of off-site fabrication, delivery schedules.
 6. Corrective measures and procedures to regain projected schedule.
 7. Status of approved Construction Schedule and revisions to the Construction Schedule as appropriate.
 8. Progress schedule during succeeding work period.
 9. Coordination of schedules.
 10. Review status of submittals and submittal schedule, expedite as required.
 11. Maintenance of quality standards.
 12. Pending changes and substitutions.
 13. Shop drawing problems.
 14. Review proposed changes for:
 - a. Effect on Construction Schedule and on completion date.
 - b. Effect on other contracts of the Project.

15. Critical/long lead items.
 16. Other business.
- G. The Contractor is to attend progress meetings and is to study previous meeting minutes and current agenda items, and be prepared to discuss pertinent topics and provide specific information including but not limited to:
1. Status of all submittals and what specifically is being done to expedite them.
 2. Status of all activities behind schedule and what specifically will be done to regain the schedule.
 3. Status of all material deliveries, latest contact with equipment manufacturer, and specific actions taken to expedite materials.
 4. Status of open deficiencies and what is being done to correct the same.
- H. The Contractor is to provide an updated schedule of submittals at each progress meeting in accordance with Section 01340 Submittals.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

**SECTION 01310
CONSTRUCTION PROGRESS SCHEDULES**

PART 1 - GENERAL

1.01 DESCRIPTION

A. Scope of Work:

1. Promptly after award of the Contract, the Contractor shall prepare and submit to the Engineer estimated construction progress schedules demonstrating complete fulfillment of all Contract requirements utilizing a Critical Path Method (hereinafter referred to as CPM) in planning, coordinating, and performing the Work under this Contract (including all activities of subcontractors, equipment vendors, and suppliers). The construction sequence which defines the longest time duration to project completion (termed “critical path”) shall be indicated on all schedule submissions. Project schedule modifications not effecting the “critical path” may not be considered for project time or compensation change orders.
2. Submit revised progress schedules on a monthly basis. No partial payments shall be approved until there is an approved construction progress schedule on hand.

B. Related Requirements Described Elsewhere:

1. Conditions of the Contract.
2. Summary of Project: Section 01010.
3. Project Meetings: Section 01200.
4. Application for Payment: Section 01027
5. Submittals: Section 01340.

1.02 QUALIFICATIONS

- A. A statement of computerized CPM capability shall be submitted in writing prior to the award of the Contract and shall verify that either Contractor's organization has in-house capability to use the CPM technique or that Contractor will employ a CPM consultant who is so qualified.
- B. In-house capability shall be verified by description of construction projects to which Contractor or Contractor's consultant has successfully applied computerized CPM.

1.03 FORM OF SCHEDULES

- A. Prepare schedules in the form of a horizontal bar chart.
 - 1. Provide a separate horizontal bar for each trade or operation within each structure or item.
 - 2. Horizontal time scale:
 - a. Show starting and completion dates for each activity in terms of the number of days after Notice to Proceed. All completion dates shown shall be within the period specified for contract completion.
 - b. Identify the first work day of each month.
 - 3. Scale and Spacing: Sufficient to allow space for notations and future revisions.
 - 4. Maximum Sheet Size: 24 inches by 36 inches.
- B. Format of Listings: The chronological order of the start of each item of work for each structure.
- C. Identification of Listings: By major specification section numbers as applicable and by structure.
- D. Construction Progress Schedules shall be computer generated using software equal to Microsoft Project Edition 2010 or newer for Windows by Microsoft, Inc. or approved equal.

1.04 CONTENT OF SCHEDULES

- A. Construction Progress Schedule:
 - 1. Show the complete sequence of construction by activity and by structure.
 - 2. Show the dates for the beginning and completion of each major element of construction in no more than a two (2) week increment scale. Specifically list, but do not limit to:
 - a. Shop Drawing Schedule.
 - b. Installation of temporary facilities.
 - c. Site clearing.
 - d. Site utilities.
 - e. Demolition.
 - f. Foundation work.
 - g. Structural work.
 - h. Subcontractor work.
 - i. Equipment installations.
 - j. Finishings.
 - k. Instrumentation.

- l. Electrical.
 - m. Painting.
 - n. Operator training and receipt of operation and maintenance manuals.
 - o. Equipment Testing.
 - p. Equipment and process start-up.
 - q. Receipt of spare parts.
 - r. Project closeout.
- 3. Show projected percentage of completion for each item, as of the first day of each month.
 - 4. Show projected dollar cash flow requirements for each month of construction and for each activity as indicated by the approved Schedule of Values.
- B. Submittals for construction progress schedules shall be in accordance with Section 01340: Submittals. Indicate on the schedule the following:
 - 1. The dates for Contractor's submittals.
 - 2. The dates submittals will be required for Owner-furnished products, if applicable.
 - 3. The dates approved submittals will be required from the Engineer.
- C. A typewritten list of all long lead items (equipment, materials, etc.).
 - D. To the extent that the progress schedule or any revised progress schedule shows anything not jointly agreed upon or fails to show anything jointly agreed upon, it shall not be deemed to have been approved by the Engineer. Failure to include any element of work required for the performance of this Contract shall not excuse the Contractor from completing all work required within any applicable completion date, notwithstanding the Engineer's approval of the progress schedule.
 - E. Scheduling Constraints: The work within Owner's property must be completed within the maximum number of days start to finish, as indicated in the Contract. Additionally, work must proceed on a continuous basis, without stoppages, except for nights and weekends. There shall be no lapses between phases of construction.

1.05 PROGRESS REVISIONS

- A. Indicate progress of each activity to date of submission.
- B. Show changes occurring since previous submission of schedule:
 - 1. Major changes in scope.
 - 2. Activities modified since previous submission.
 - 3. Revised projections of progress and completion.
 - 4. Other identifiable changes.

- C. Provide a narrative report as needed to define:
 - 1. Problem areas, anticipated delays, and the impact on the schedule.
 - 2. Corrective action recommended, and its effect.
 - 3. The effect of changes on schedules of other prime contractors.
- D. If the Work falls behind the critical path schedule by two (2) weeks or more, the Contractor shall prepare a recovery schedule.

1.06 SUBMISSIONS

A. Submittal Requirements.

- 1. Logic network and/or time-phased bar chart, computer generated.
- 2. Computerized network analysis:
 - a. Sort by early start
 - b. Sort by float
 - c. Sort by predecessor/successor
- 3. Narrative description of the logic and reasoning of the schedule.

B. Time of Submittals.

- 1. Within ten (10) working days after Notice to Proceed, Contractor shall submit a network diagram describing the activities to be accomplished in the project and their dependency relationships, (predecessor/successor) as well as a tabulated schedule as herein defined. The total length of time indicated on the initial CPM schedule shall equal the exact number of days in the Contract Time as defined in the Contract. The schedule produced and submitted shall also indicate calendar dates, including project starting and completion dates, based on the Contract Commencement and completion dates indicated in the Notice to Proceed. The Engineer will complete the review of the complete schedule within fifteen (15) working days after receipt. During the review process, the Engineer may meet with a representative of Contractor to review the proposed plan and schedule to discuss any clarifications that may be necessary.
- 2. Within ten (10) working days after the conclusion of the Engineer's review period, Contractor shall revise the network diagram as required and resubmit the network diagram and a tabulated schedule produced there from. The revised network diagram and tabulated schedule shall be reviewed and accepted or rejected by the Engineer within fifteen (15) working days after receipt. The network diagram and tabulated schedule, when accepted by the Engineer, shall constitute the project work schedule unless a revised schedule is required due to substantial changes in the Work, a change in Contract Time or a recovery schedule is required and requested.

C. Acceptance.

1. The finalized schedule will be acceptable to the Engineer when, in the opinion of the Engineer, it demonstrates an orderly progression of the Work to completion in accordance with the Contract Documents. Such acceptance will neither impose on the Engineer responsibility for the progress or scheduling of the Work nor relieve Contractor from full responsibility therefore. The finalized schedule of shop drawing submittals will be acceptable to the Engineer when, in the opinion of the Engineer, it demonstrates a workable arrangement for processing the submittals in accordance with the requirements. The finalized Schedule of Values (lump sum price breakdown), as applicable, will be acceptable to the Engineer as to form and content when, in the opinion of the Engineer, it demonstrates a substantial basis for equitably distributing the Contract Price. When the network diagram and tabulated schedule have been accepted, the Contractor shall submit to the Engineer and Owner six (6) copies of the time-scaled network diagram each and one (1) CD/DVD containing electronic the Microsoft Project files.

D. Revised Work Schedules.

1. Contractor, if requested by the Engineer, shall provide a revised work schedule if, at any time, the Engineer considers the completion date to be in jeopardy because of "activities behind schedule." The revised work schedule shall include a new diagram and tabulated schedule conforming to the requirements of Paragraph 1.09 herein, designed to show how Contractor intends to accomplish the Work to meet the completion date. The form and method employed by Contractor shall be the same as for the original work schedule. No payment will be made if activities fall more than two (2) weeks behind schedule and a revised work schedule is not furnished.

E. Schedule Revisions.

1. The Engineer may require Contractor to modify any portions of the work schedule that become infeasible because of "activities behind schedule" or for any other valid reason. An activity that cannot be completed by its original latest completion date shall be deemed to be behind schedule. No change may be made to the sequence, duration, or relationships of any activity without approval of the Engineer.

1.07 DISTRIBUTION

A. Distribute copies of the reviewed schedules to:

1. Engineer (4 Copies).
2. Jobsite file (1 Copy).
3. Subcontractors.
4. Other concerned parties.

5. Owner (2 Copies and 1 CD/DVD).

- B. Instruct recipients to report promptly to the Contractor, in writing, any problems anticipated by the projections shown in the schedules.

1.08 CHANGE ORDERS

- A. Upon approval of a change order, the approved changes shall be reflected in the next scheduled revision or update submittal of the construction progress schedule by the Contractor.

1.09 SCHEDULE MONITORING

- A. At not less than monthly intervals or when specifically requested by Engineer, Contractor shall submit to the Engineer a computer printout of an updated schedule for those activities that remain to be completed. Typically, the updated schedule will be submitted with the application for payment as specified below.
- B. The updated schedule shall be submitted in the form, sequence, and number of copies requested for the initial schedule.

1.10 PROGRESS MEETINGS

- A. For the monthly progress meeting, Contractor shall submit a revised CPM schedule and a three-week look-ahead schedule, showing all activities completed, in progress, uncompleted, or scheduled to be worked during the weeks. The three (3) weeks include the current week plus the next two weeks. All activities shall be from the approved CPM and must be as shown on the CPM unless behind or ahead of schedule. One copy of the revised CPM schedule shall be submitted with each copy of that month's application for payment, six (6) copies minimum.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

**SECTION 01340
SUBMITTALS**

PART 1 - GENERAL

1.01 DESCRIPTION

A. Scope of Work:

1. The Contractor shall submit to the Engineer for review, shop drawings, test reports and data on materials and equipment (hereinafter in this article called data), material samples (hereinafter in this article called samples), and certifications as are required for materials and equipment specified in the Specifications and the Contract Drawings.
2. The Contractor shall submit to the Engineer a complete list of items for which shop drawings and/or equipment data are to be submitted. Included in this list shall be the names of all proposed manufacturers furnishing specified items. Review of this list by the Engineer shall in no way expressed or implied relieve the Contractor from submitting complete shop drawings and/or equipment data and providing materials, equipment, etc., fully in accordance with the Specifications.
3. The Contractor is to maintain an accurate updated submittal log and will bring this log to each scheduled progress meeting with the Owner and the Engineer. This log should include the following items:
 - a. Submittal Description and Number assigned.
 - b. Date Submitted to Engineer.
 - c. Date Received Back from Engineer
 - d. Status of Submittal (Approved, Approved as Noted, Not Approved/Resubmit).
 - e. Date of Re-submittal and Return (as applicable).
 - f. Date Equipment Released for Fabrication/Delivery.
 - g. Projected Date of Fabrication.
 - h. Projected Date of Delivery to Site.
 - i. Status of O&M Manuals Submittal.

1.02 CONTRACTOR'S RESPONSIBILITY

- A. It is the responsibility of the Contractor to check all drawings, data and samples prepared before submitting them to the Engineer and Design Engineer for review. Each and every copy of the Drawings and data shall bear Contractor's stamp showing that they have been so checked. Shop drawings and/or equipment data submitted to the Engineer without the Contractor's stamp will be returned to the Contractor for conformance with this requirement. Shop drawings shall indicate any deviations in the submittal from requirements of the Contract Documents. If the Contractor takes

exception to the specifications, the Contractor shall note the exception in the letter of transmittal to the Engineer.

- B. Determine and verify:
 - 1. Field measurements.
 - 2. Field construction criteria.
 - 3. Catalog numbers and similar data.
 - 4. Conformance with Specifications.
- C. The Contractor shall furnish the Engineer a schedule of submittals with the expected dates for the submissions of shop drawings and/or equipment data and the expected time for fabrication and delivery. This schedule shall indicate those that are critical to the construction schedule.
- D. The Contractor shall not begin any of the work covered by a drawing, data, or a sample returned for correction until a revision or correction thereof has been reviewed and returned to him, by the Engineer, with approval.
- E. The Contractor shall submit to the Engineer all drawings and schedules sufficiently in advance of construction requirements to provide no less than thirty (30) calendar days for reviewing and approval/disapproval from the time the Engineer receives them.
- F. All submittals shall be accompanied with a transmittal letter prepared in duplicate containing the following information:
 - 1. Date
 - 2. Project Title and Number
 - 3. Contractor's name and address
 - 4. The number of each Shop Drawings submitted.
 - 5. Notification of Deviations from Contract Documents.
 - 6. Submittal Log Number referencing the Specification Section Number.
- G. The Contractor shall submit five (5) copies of equipment or product data information and shop drawings plus the number of copies which the Contractor requires returned. All shop drawings shall be submitted with the same number of prints as Shop Drawings, plus the number of copies which the contractor requires returned. The Engineer will review the shop drawings and return to the Contractor the set of marked-up drawings with appropriate review comments.
- H. The Contractor shall be responsible for and bear all costs of damages which may result from the ordering of any material or from proceeding with any part of work prior to the completion of the review by Engineer of the necessary shop drawings and/or equipment data.

- I. The Contractor shall be fully responsible for observing the need for and making any changes in the arrangement of piping, connections, wiring, manner of installation, etc., which may be required by the materials/equipment he proposed to supply both as pertains to his own work and any work affected under other parts, headings, or divisions of drawings and specifications.
- J. The Contractor shall not use shop drawings as a means of proposing alternate items to demonstrate compliance with the Drawings and Specifications.

1.03 ENGINEER'S REVIEW OF SUBMITTALS

- A. The review by the Engineer of shop drawings, equipment data, and samples submitted by the Contractor will cover only general conformity to the Specifications, external connections, and dimensions which affect the installation. The Engineer's review and exceptions, if any, will not constitute an approval of dimensions, quantities, and details of the material, equipment, device, or item shown.
- B. The review of shop drawings, equipment data, schedules, and/or O&M data will be general, and shall not be construed:
 - 1. As permitting any departure from the Contract requirements;
 - 2. As relieving the Contractor of responsibility for any errors, including details, dimensions, and materials;
 - 3. As approving departures from details furnished by the Engineer, except as otherwise provided herein.
- C. If the drawings or schedules as submitted describe variations and show a departure from the Contract requirements which Engineer finds to be in the interest of the Owner and to be so minor as not to involve a change in Contract Price or time for performance, the Engineer may return the reviewed drawings without noting an exception.
- D. When reviewed by the Engineer, each of the submittals will be identified as having received such review being so stamped and dated. Submittals stamped "APPROVED AS NOTED" or "DISAPPROVED, "REVISE AND RESUBMIT" and with required corrections shown will be returned to the Contractor for correction and re-submittal.
- E. Re-submittals will be handled in the same manner as first submittals. On re-submittals the Contractor shall direct specific attention, in writing or on resubmitted shop drawings, to revisions other than the corrections requested by the Engineer on previous submissions. The Contractor shall address and make any corrections required by the Engineer.
- F. If the Contractor considers any correction indicated on the drawings to constitute a change to the Contract Drawings or Specifications, the Contractor shall give written notice thereof to the Engineer.

- G. Shop drawings and other submittal data shall be reviewed by the Engineer for each original submittal and for the first re-submittal. Thereafter, review time for subsequent re-submittals shall be charged to the Contractor in accordance with the terms of the Engineer's Agreement with the Owner.
- H. When the shop drawings and/or equipment data have been approved or approved as noted by the Engineer, the Contractor shall carry out the construction in accordance therewith and shall make no further changes therein except upon written instructions from the Engineer.
- I. No partial submittals will be reviewed. Submittals not complete will be returned to the Contractor for re-submittal.
- J. All drawings, schematics, manufacturer's product data, certifications and other shop drawing submittals required by a system specification shall be submitted at one time as a package to facilitate interface checking.

1.04 SHOP DRAWINGS AND/OR EQUIPMENT DATA

- A. Shop drawings shall be complete and detailed and shall consist of fabrication, erection, and setting drawings, manufacturer's scaled drawings, and wiring and control diagrams.
- B. Equipment data shall include manufacturer's catalog sheets, brochures, diagrams, illustrations and other standard descriptive data and shall be clearly marked to identify pertinent materials, products or models.
- C. If drawings show variations from Contract requirements because of standard shop practice or for other reasons, the Contractor shall describe such variations in his letter of transmittal. If acceptable, proper adjustment in the Contract shall be implemented where appropriate. If the Contractor fails to describe such variations, he shall not be relieved of the responsibility for executing the work in accordance with the Contract, even though such drawings have been reviewed.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

**SECTION 01380
CONSTRUCTION PHOTOGRAPHS**

PART 1 - GENERAL

1.01 SCOPE OF WORK

- A. Scope of Work: The Contractor shall have a competent photographer take construction record photographs prior to start of work and periodically during the course of the Work.
- B. Related Requirements Described Elsewhere:
 - 1. Summary of Project: Section 01010
 - 2. Project Record Documents: Section 01720

1.02 PHOTOGRAPHY REQUIRED

- A. Photographs taken in conformance with this Section shall be furnished to the Engineer with each pay request.
- B. Photographs shall be taken at each of the major stages or 30 days, whichever is more frequent, of construction and as directed by the Engineer.
- C. Photographs may be taken by the Contractor's personnel but must be of professional quality as herein specified. Photographs which are deemed unsatisfactory will be rejected and retakes will be required.
- D. Views and Quantities Required:
 - 1. Six (6) digital photos of one (1) view of each activity as directed by the Resident Project Representative, up to a limit of ten activities photographed per month.
 - 2. Six (6) digital photos of five (5) views of overall Project site monthly, as directed by the Resident Project Representative.

1.03 COST OF PHOTOGRAPHY

- A. The Contractor shall pay costs for specified photography and prints. Parties requiring additional photography or prints will pay the photographer directly.

PART 2 - PRODUCTS

2.01 PRINTS

- A. Type of Print:
 - 1. Paper: Single weight, color print paper.
 - 2. Finish: Smooth surface, glossy.
 - 3. Size: 8 inch x 10 inch for construction photos.
- B. Identify each print on back, listing:
 - 1. Name of project
 - 2. Orientation of view
 - 3. Date and time of exposure
 - 4. Name and address of photographer
 - 5. Photographer's numbered identification of exposure

PART 3 - EXECUTION

3.01 TECHNIQUE

- A. Factual Presentation.
- B. Correct exposure and focus.
 - 1. High resolution and sharpness
 - 2. Maximum depth-of-field
 - 3. Minimum distortion

3.02 VIEWS REQUIRED

- A. Photograph from locations to adequately illustrate condition of construction and state of progress.
 - 1. At successive periods of photography, take at least one photograph from the same overall view as previously photographed.
 - 2. Consult with the Engineer at each period of photography for instructions concerning views required.

3.03 DELIVERY OF PRINTS

- A. Deliver prints to the Engineer to accompany each Application for Payment.
- B. Distribution of construction prints as soon as processed is anticipated to be as follows:
 - 1. Owner (two (2) sets and one (1) CD/DVD with all digital picture files)
 - 2. Engineer (two (2) sets)
 - 3. Project record file (one (1) set to be stored by Contractor until the end of the project which shall be delivered with Project Record Documents as specified in Section 01720).
 - 4. Contractor (one (1) set)

END OF SECTION

**SECTION 01410
TESTING AND LABORATORY SERVICES**

PART 1 - GENERAL

1.01 DESCRIPTION

A. Scope of Work:

1. Contractor will employ, and pay for services of an Independent Testing Laboratory to perform testing specifically indicated on the Contract Documents or specified in the Specifications and may at any other time elect to have materials and equipment tested for conformity with the Contract Documents.
2. Contractor shall cooperate with the laboratory to facilitate the execution of its required services.

B. Related Requirements Described Elsewhere:

1. Conditions of the Contract.
2. Respective section of the Specifications: Certification of products.
3. Each Specification section listed: Laboratory tests required, and standards for testing.
4. Testing laboratory inspection, sampling and testing is required for, but not limited to the following:
 - a. Division 3

C. The following schedule defines the responsibilities of various tests.

Test

Notes

Paid for By

Bacteriological	As required by local and state agencies and as specified in AWWA C652-02; Disinfection of Water Storage Facilities.	Contractor
Concrete	Slump test each delivery and compression test five (5) cylinders every 50 C.Y. minimum.	Contractor

- D. Additional Tests: The Contractor shall pay for first tests as specified herein. In the event that first test samples do not meet the applicable material specification, the Contractor shall take measures to conform the material and equipment to the Specifications. All subsequent tests after the first test required to show compliance with the Specifications shall be paid for by the Contractor.

1.02 CONTRACTOR'S RESPONSIBILITIES

- A. Cooperate with Owner's personnel and laboratory personnel. Provide access to Work and manufacturer's operations.
- B. Provide to the laboratory the preliminary design mix proposed to be used for concrete, and other materials mixes which require control by the testing laboratory.
- C. Materials and equipment used in the performance of work under this Contract are subject to inspection and testing at the point of manufacturer or fabrication. Standard specifications for quality and workmanship are indicated in the Contract Documents. The Engineer may require the Contractor to provide statements or certificates from the manufacturers and fabricators that the materials and equipment provided by them are manufactured or fabricated in full accordance with the standard specifications for quality and workmanship indicated in the Contract Documents. All costs of providing statements and certificates shall be a subsidiary obligation of the Contractor, and no extra charge to the Owner shall be allowed on account of such testing and certification.
- D. Furnish incidental labor and facilities:
 - 1. To provide access to Work to be tested.
 - 2. To facilitate inspections and tests.
- E. Notify Owner a minimum of three (3) working days in advance of operations to allow for laboratory assignment of personnel and scheduling of tests.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

**SECTION 01505
MOBILIZATION**

PART 1 - GENERAL

1.01 DEFINITION AND SCOPE

- A. Mobilization shall include the obtaining of all permits, insurance, and bonds; moving onto the site of all facilities and equipment; furnishing and erecting, temporary buildings and other construction facilities; all as required for the proper performance and completion of the Work. Mobilization shall include, but not be limited to the following:
1. Move onto the site all Contractors' facilities and equipment required for the first month's operations.
 2. Install temporary construction power, wiring and lighting facilities.
 3. Establish fire protection plan and safety program.
 4. Secure construction water supply from Owner.
 5. Provide on-site sanitary facilities and potable water facilities as specified.
 6. Arrange for and erect Contractor's work and storage yard and employee's parking facilities.
 7. Submit all required insurance certificates and bonds.
 8. Obtain all required permits.
 9. Post all OSHA, EPA, Department of Labor and all other required notices.
 10. Have Contractor's superintendent at the job site full time.
 11. Submit a detailed construction CPM schedule acceptable to the Engineer as specified.
 12. Submit a schedule of submittals.

1.02 DEMOBILIZATION

- A. Demobilization is the timely and proper removal of all contractor owned material, equipment or facilities, from the jobsite and the proper restoration or completion of work necessary to bring the site into full compliance with the contract documents.

**SECTION 01650
START-UP AND DEMONSTRATION**

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Scope of Work: Provide material, personnel, and equipment as needed and as specified herein to perform the required start-up and demonstration tests.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.01 PRELIMINARY FIELD TESTS

- A. Start-up Certification: Prior to system start-up, the Contractor shall successfully complete all the field testing required of the individual components of the work. Copies of all test reports shall be provided within the respective copies of the Operation and Maintenance Manual. This form shall be completed and submitted before Instruction in Operation to Owner or a request for initiating any final inspection(s).
- B. The Contractor shall demonstrate to the Owner's Representative that all temporary jumpers and/or bypasses have been removed and that all of the components are operating under their own controls as designated.
- C. Coordinate start up activities with the Owner's operating personnel at the site and with the Engineer prior to commencing system start-up.

3.02 START-UP TESTS

- A. Confirm that all equipment that the valves are set to their normal operating condition and that the flow path through the new work is unobstructed.
- B. Start-up and training shall be initiated in accordance with and with the use of the operation and maintenance manuals.
- C. Manufacturer's representative shall be onsite for the altitude valve startup.
- D. If the system fails to operate successfully, or if the start-up is interrupted due to other contracts, the problems will be corrected and the test will start over. The party causing the interruption will be subject to the assessment of actual damages due to delay. During the start-up tests, instruct designated operating personnel in the function and operation of the Work.
- E. The Contractor shall coordinate with the Owner for any adjustments desired or operational problems requiring debugging.
- F. The Contractor shall make adjustments as necessary to correct any deficiencies.

3.03 DEMONSTRATION TESTS

- A. After all Work components have been constructed, field tested and started-up in accordance with the individual specifications and manufacturer requirements, perform the Demonstration Tests in the presence of the RPR and the Owner. The demonstration shall be held upon completion of all systems at a date to be agreed upon in writing by the RPR and the Owner.
- B. During the demonstration test, operate the Work and cause various operational circumstances to occur. As a minimum, these circumstances will include tank fill, tank drain, and alarm conditions. Demonstrate the essential features of the equipment and its relationship to other equipment. Prior to the demonstration test, the Contractor shall a detailed schedule of operational circumstances to describe the proposed test procedures for approval of completeness. These approved procedures will then be used as the agenda at the demonstration. Coordination of the test schedule will be accomplished through the RPR.
- C. The demonstration test procedures shall follow the example test procedure form provided at the end of this section. Provide supplemental test procedure forms for each section of the work to cover all aspects and features specified. Refer also to Section 15044 which covers pressure testing.
- D. Acceptability of the Work's performance will be based on the Work performing as specified, under these actual and simulated operating conditions as defined in the Contract Documents. The intent of the demonstration tests is for the Contractor to demonstrate to the Owner and the RPR that the Work will function as a complete and operable system under normal as well as emergency operating conditions and is ready for acceptance.
- E. Demonstrate the essential features of the whole system as it applies to the Work, including the mechanical equipment, piping, structures, finishes, controls, instrumentation, and power distribution. Use the approved procedures and circumstances to demonstrate the system. Any minor deficiencies found shall be noted and included on a punch list attached to the Certificate of Completed Demonstration. The system shall be demonstrated only once, after completion of start-up tests. If circumstances arise that interrupt the test procedures (such as weather, unforeseen process problems, or problems caused by the Contractor whether or not the problems are the fault of the Contractor, etc.), then the test shall be terminated and rescheduled to a later date after the problem is corrected. The test shall be run in its entirety if so directed by the RPR.
- F. Certificate of Completed Demonstration: Submit one (1) electronic copy of the Facility Performance Demonstration Certification Form for the Work, signed by the Contractor and the RPR and insert one copy in each Operation and Maintenance Manual. A sample Facility Performance Demonstration Certification Form is provided at the end of this section.

FACILITY PERFORMANCE DEMONSTRATION CERTIFICATION FORM

OWNER: _____ **PROJECT:** _____

Unit Processes Description (List unit processes involved in facility startup):

Unit Processes Startup Sequence (Describe sequence for startup, including computerized operations, if any):

Contractor Certification that Facility is capable of performing its intended function(s), including fully automatic operation:

Contractor: _____ **Date:** _____, 20__

RPR: _____ **Date:** _____, 20__
(Authorized Signature)

END OF SECTION

**SECTION 01700
CONTRACT CLOSEOUT**

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Scope of Work: Comply with requirements stated in the General Conditions and Requirements of the Contract and in specifications for administrative procedures in closing out the Work.

1.02 SUBSTANTIAL COMPLETION

- A. The work may not be considered substantially complete unless the punch list items that remain, as identified by the Engineer and Owner, can be completed within thirty (30) days. All painting, finishes, fencing, cleanup, final grading, grassing and landscape planting shall have been completed and ready for inspection before substantial completion is given. Also, all building occupancy certificates will need to have been obtained. After (or concurrent with) the Demonstration Tests, with any minor deficiencies noted, the Contractor wishing to consider the Work substantially complete, shall have work completed as follows and submit to the Engineer:
1. A written notice that the Work is substantially complete.
 2. A list of items to be completed or corrected and explanations thereof.
 3. All Operations and Maintenance manuals have been submitted and approved in accordance with the Contract documents.
 4. All equipment has been checked-out by the equipment manufacturer and Certificates of Manufacturer's Check-Out has been submitted in accordance with the Contract documents.
 5. All start-up and demonstration testing completed and Certificates of Completed Demonstration submitted are in accordance with the Contract documents.
 6. Project Record Documents are complete and have been submitted and reviewed in accordance with the Contract documents.
 7. All training of Owner's personnel is completed.
 8. All areas to be used and occupied are safe, operable in automatic and complete.
 9. All deficiencies noted on inspection reports or non-conformances are corrected or the correction plan is approved.

10. All building inspections shall have been performed and passed by the local code officials.
- B. Within a reasonable time after receipt of such notice, the Engineer will make an inspection, if necessary, to determine the status of completion.
 - C. Should Engineer determine that the Work is not substantially complete:
 1. The Engineer will promptly notify Contractor in writing, giving the reasons therefore.
 2. Contractor shall remedy the deficiencies in the Work and send a second written notice of substantial completion to the Engineer.
 3. Engineer will reinspect the Work.
 - D. When Engineer finds that the Work is substantially complete, he will:
 1. Prepare a tentative Certificate of Substantial Completion, with a tentative list of items to be completed or corrected before final inspection.
 2. After consideration of any objections made by the Owner as provided in the General Conditions of the Contract, the Engineer will execute the Certificate of Substantial Completion with a revised tentative list of items to be completed or corrected.

1.03 FINAL INSPECTION AFTER COMPLETION

- A. When Contractor considers the Work is complete with all minor deficiencies completed or corrected, he shall submit written certification that:
 1. Contract Document requirements have been met.
 2. Work has been inspected for compliance with Contract Documents.
 3. Work has been completed in accordance with Contract Documents.
 4. Equipment and systems have been tested in the presence of Owner's representative and are operational.
 5. All minor deficiencies have been corrected or completed and the Work is ready for final inspection.
 6. All operation and maintenance manuals have been submitted.
 7. Project record documents are complete and submitted.
 8. Transfer of all spares and expendables has been made to the Owner with a full accounting of the quantities and amounts due.
- B. Engineer will make an inspection to verify the status of completion with reasonable promptness after receipt of such certification.

- C. Should Engineer consider that the Work is incomplete or defective:
 - 1. Engineer will promptly notify the Contractor in writing, listing the incomplete or defective work.
 - 2. Contractor shall take immediate steps to remedy the stated deficiencies, and send a second written certification to Engineer that the Work is complete.
 - 3. Engineer will reinspect the Work.
- D. When the Engineer finds that the Work is acceptable under the Contract Documents, he shall request the Contractor to make closeout submittals.

1.04 CONTRACTOR'S CLOSEOUT SUBMITTALS TO ENGINEER

- A. Evidence of compliance with requirements of governing authorities.
- B. Project Record Documents: To requirements of Section 01720.
- C. Spare Parts and Maintenance Materials: To requirements of Technical Sections of the Specifications.
- D. Evidence of Payment and Release of Liens: To requirements of General and Special Conditions.
- E. Certificate of Insurance for Products and Completed Operations.

1.05 FINAL APPLICATION FOR PAYMENT

- A. Contractor shall submit the final Application for Payment in accordance with procedures and requirements stated in the Conditions of the Contract.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

**SECTION 01710
CLEANING**

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Scope of Work: Execute cleaning, during progress of the Work, and at completion of the Work, as required by the General Conditions.
- B. Related Work Described Elsewhere:
 - 1. General Conditions and Requirements of the Contract.
 - 2. Each Specification Section: Cleaning for specific Products or Work.

1.02 DISPOSAL REQUIREMENTS

- A. Conduct cleaning and disposal operations to comply with codes, ordinances, regulations, and anti-pollution laws.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Use only those cleaning materials which will not create hazard to health or property and which will not damage surfaces.
- B. Use only those cleaning materials and methods recommended by manufacturer of the surface material to be cleaned.
- C. Use cleaning materials only on surfaces recommended by cleaning material manufacturer.

PART 3 - EXECUTION

3.01 DURING CONSTRUCTION

- A. Execute daily cleaning to keep the Work, the site, and adjacent properties free from accumulations of waste materials, rubbish and windblown debris, resulting from construction operations.
- B. Provide on-site containers for the collection of waste materials, debris and rubbish.

- C. Remove waste materials, debris and rubbish from the site periodically and dispose of at legal disposal areas away from the site.

3.02 DUST CONTROL

- A. Construction techniques that minimize the production and distribution of dust shall be used.
- B. Schedule operations so that dust and other contaminants resulting from cleaning process will not fall on wet or newly-coated surfaces.

3.03 FINAL CLEANING

- A. Prior to final completion, or Owner occupancy, the Engineer shall conduct an inspection of sight-exposed interior and exterior surfaces and all work areas, to verify that the entire Work is clean.

END OF SECTION

**SECTION 01720
PROJECT RECORD DOCUMENTS**

PART 1 - GENERAL

1.01 PURPOSE AND DESCRIPTION OF WORK

- A. The purpose of the Project Record Documents is to provide the Owner with factual information regarding all aspects of the Work, both concealed and visible, to enable future location, identification and modification of the Work without lengthy and expensive site measurement, investigation or examination.
- B. Provide production of the As-Built Drawings.

1.02 DEFINITIONS

- A. Except where specific definitions are used within a specific section, the following terms, phrases, words and their derivation shall have the meaning given herein when consistent with the context in which they are used. Words used in the present tense include the future tense, words in the plural number include the singular number and words in the singular number include the plural number. The word "shall" is mandatory, and the word "may" is permissive.
 - 1. **As-Built Drawings:** Drawings prepared by the Contractor's Surveyor shall depict the actual location of installed utilities for the completed Work in a full size hard copy and an electronic AutoCAD file (dwg) format.
 - 2. **Record Drawings:** Drawings prepared by and certified by the Owner's Consultant Engineer, shall be a compiled representation of the constructed project, a listing of the sources and the basis of information used in the preparation of the "record drawings", the constructed project meets the Engineer's design intent and note the material deviations from the design documents, and the accuracy of the location information is based upon the Contractor's surveyor data.

1.03 RELATED REQUIREMENTS

- A. All General Conditions, Supplements to the General Conditions, and any Addenda issued by the Owner are a part of this Section in the same manner as if fully written herein, and shall govern the Work of this Section, except where more stringent articles or requirements are stipulated, then they shall govern this Section.
- B. The Contract Documents are complementary and what is required by anyone shall be as binding as if required by all.
- C. Other requirements affecting Record Documents may appear in pertinent other sections of these specifications.

1.04 QUALITY ASSURANCE

- A. Delegate the responsibility for maintenance of the Record Documents to one person on the Contractor's staff as approved by the Owner.
- B. Thoroughly coordinate changes within the Record Documents, making adequate and proper entries on each page of specifications and each sheet of drawings and other documents where such entry is required to show progress and changes properly.
- C. Make entries within 24-hours after receipt of information has occurred.

1.05 SUBMITTALS

- A. Comply with pertinent provisions for the timely submittal requirements under this article and specification section.
- B. Prior to submitting a monthly payment application, the Contractor's progressive As-Built Drawings shall be acceptable to the Owner.
- C. Progressive As-Built Drawings which will indicate the horizontal and vertical locations of all current constructed improvements with sufficient information and notes to easily determine if the improvements were constructed in conformance with the Contract Documents.
- D. Prior to submitting a request for final payment or the Owner issuing a Certificate of Completion for the Work, the Contractor shall submit the final Record Documents to the Owner for approval. Retainage funds will be withheld at the Owner's discretion based on the quality and accuracy of the final Record Documents.

1.06 RECORD DOCUMENTS AT SITE

- A. Maintain at the site and always available for Owner's use one record copy of:
 - 1. Construction Contract, Drawings, Specifications, General Conditions, Supplemental Conditions, Bid Proposal, Instruction to Bidders, Addenda, and all other Contract Documents.
 - 2. Change Orders, Verbal Orders, and other modifications to Contract.
 - 3. Written instructions by the Owner as well as correspondence related to Requests for Information (RFIs).
 - 4. Accepted Shop Drawings, Samples, product data, substitution and "or-equal" requests
 - 5. Field test records, inspection certificates, manufacturer certificates and construction photographs.
 - 6. Progressive As-Built Drawings
- B. Maintain the documents in an organized, clean, dry, legible condition and completely protected from deterioration and from loss and damage until completion of the Work, transfer of all record data to the final Record Documents and for submittal to the Owner.

PART 2 - PRODUCTS

2.01 AS-BUILT DRAWINGS

- A. Maintain the As-Built Drawings to accurately record progress of Work and change orders throughout the duration of the Contract.
- B. Date all entries. Enter RFI No., Change Order No., etc. when applicable.
- C. Call attention to the entry by highlighting with a “cloud” drawn around the area affected.
- D. In the event of overlapping changes, use different colors for entries of the overlapping changes.
- E. Design call-outs shall have a thin strike line through the design call-out and all As-Built information must be labeled (or abbreviated “AB”) and be shown in a bolder text that is completely legible.
- F. Make entries in the pertinent other documents while coordinating with the Engineer and the Owner for validity.

2.02 RECORD DOCUMENTS

- A. A full size, two (2) hard copy set of the final Record Documents and shall include all of the documents described below under this subsection 2.02.
- B. Digital Set of the final Record Documents including but not limited to:
 - 1. Scanned digital copies of the final As-Built Drawings
 - 2. Electronic Survey documents electronically sealed by the Surveyor
 - 3. Final Record Documents information
- C. The scanned As-Built drawing sets shall be complete and include the title sheet, plan/profile sheets, cross-sections, and details. Each individual sheet contained in the printed set of the As-Built Drawings shall be included in the electronic drawings, with each sheet being converted into an individual tif (tagged image file). The plan sheets shall be scanned in tif format Group 4 at 400 dpi resolution to maintain legibility of each drawing. Then, the tif images shall be embedded into a single pdf (Adobe Acrobat) file representing the complete plan set. Review all Project Record Documents to ensure a complete record of the project.

PART 3 - EXECUTION

3.01 CONSTRUCTION PROGRESS MEETINGS

- A. Contractor shall provide progressive and a final version of the Record Documents both as paper copies and electronic format described below.
 - 1. Construction Contract, As-Built Drawings, Specifications, General Conditions, Supplemental Conditions, Bid Proposal, Instruction to Bidders, Addenda, and all other Contract Documents.

2. Specifications and Addenda: Record manufacturer, trade name, catalog number and supplier of each product and item of equipment actually installed as well as any changes made by Field Order, Change Order or other.
3. Change orders, verbal orders, and other modifications to Contract.
4. Written instructions by the Owner as well as correspondence related to Requests for Information (RFIs).
5. Accepted Shop Drawings, samples, product data, substitution and “or-equal” requests.
6. Field test records, inspection certificates, manufacturer certificates and construction photographs.

3.02 FINAL RECORD DOCUMENTS SUBMITTAL

- A. Submit the Final Record Documents within 20 days after Substantial Completion.
 1. Participate in review meetings as required and make required changes and promptly deliver the Final Record Documents to the Engineer and Owner.

3.03 STORAGE AND PRESERVATION

- A. Store Record Documents and samples at a protected location in the project field office apart from documents used for construction.
 1. Provide files and racks for storage of documents
 2. Provide locked cabinet or secure space for storage of samples.
- B. File documents and samples in accordance with CSI format with section numbers matching those in the Contract Documents.
- C. In the event of loss of recorded data, use means necessary to again secure the data to the Owner’s approval.
 1. Such means shall include, if necessary in the opinion of the Owner, removal and replacement of concealing materials.
 2. In such cases, provide replacements of the concealing materials to the standards originally required by the Contract Documents.

END OF SECTION

**SECTION 01730
OPERATING AND MAINTENANCE DATA**

PART 1 - GENERAL

1.01 DESCRIPTION

A. Scope of Work:

1. Compile product data and related information appropriate for Owner's maintenance and operation of products furnished under Contract.
2. Prepare operating and maintenance data as specified in this Section and as referenced in other pertinent sections of Specifications.
3. Instruct Owner's personnel in maintenance of products and in operation of equipment and systems.

1.02 QUALITY ASSURANCE

A. Preparation of data shall be done by personnel:

1. Trained and experienced in maintenance and operation of described products.
2. Familiar with requirements of this Section.
3. Skilled as a technical writer to the extent required to communicate essential data.
4. Skilled as draftsman competent to prepare required drawings.

1.03 FORM OF SUBMITTALS

A. Prepare data in form of an instructional manual for use by Owner's personnel.

B. Format:

1. Size: 8 1/2 inches x 11 inches.
2. Paper: 20 pound minimum, white, for typed pages.
3. Text: Manufacturer's printed data, or neatly typewritten.
4. Drawings:
 - a. Provide reinforced punched binder tab, bind in with text.
 - b. Reduce larger drawings and fold to size of text pages but not larger than 11 inches x 17 inches.
5. Provide fly-leaf for each separate products, or each piece of operating equipment.

- a. Provide typed description of products and major component parts of equipment.
 - b. Provide indexed tabs.
 - 6. Cover: Identify each volume with typed or printed title "OPERATING AND MAINTENANCE INSTRUCTIONS". List:
 - a. Title of Project.
 - b. Identity of separate structure as applicable.
 - c. Identity of general subject matter covered in the manual.
- C. Binders:
- 1. Commercial quality three D-ring binders with durable and cleanable plastic covers.
 - 2. Maximum post width: 2 inches.
 - 3. When multiple binders are used, correlate the data into related consistent groupings.
- D. Electronic Format:
- 1. In addition to hardcopies for the Owners personnel, two (2) electronic copies (PDF) of all Operation and Maintenance Manuals shall be provided to the Owner and Engineer.

1.04 CONTENT OF MANUAL

- A. Neatly typewritten table of contents for each volume, arranged in systematic order.
- 1. Contractor, name of responsible principal, address and telephone number.
 - 2. A list of each product required to be included, indexed to content of the volume.
 - 3. List, with each product, name, address and telephone number of:
 - a. Subcontractor or installer, manufacturer and supplier name, address and telephone number.
 - b. A list of each product required to be included, indexed to content of the volume.
 - c. Identify area of responsibility of each.
 - d. Local source of supply for parts and replacement name, address and telephone number.
 - 4. Identify each product by product name and other identifying symbols as set forth in Contract Documents.

B. Product Data:

1. Include only those sheets which are pertinent to the specific product.
2. Annotate each sheet to:
 - a. Clearly identify specific product or part installed.
 - b. Clearly identify data applicable to installation.
 - c. Delete references to inapplicable information.
3. Operation and maintenance information as herein specified.
4. Record shop drawings as submitted and approved with all corrections made for each product.

C. Drawings:

1. Supplement product data with drawings as necessary to clearly illustrate:
 - a. Relations of component parts of equipment and systems.
 - b. Control and flow diagrams.
2. Coordinate drawings with information in Project Record Documents to assure correct illustration of completed installation.
3. Do not use Project Record Documents as maintenance drawings.

D. Written text, as required to supplement product data for the particular installation:

1. Organize in consistent format under separate headings for different procedures.
2. Provide logical sequence of instructions of each procedure.

E. Copy of each warranty, bond and service contract issued.

1. Provide information sheet for Owner's personnel, give:
 - a. Proper procedures in event of failure.
 - b. Instances which might affect validity of warranties or bonds.

1.05 MANUAL FOR MATERIALS AND FINISHES

A. Submit six (6) copies of complete manual in final form in addition to two (2) electronic copies (PDF).

B. Content: for applied materials and finishes:

1. Manufacturer's data, giving full information on products.
 - a. Catalog number, size, and composition.
 - b. Color and texture designations.
 - c. Information required for reordering special manufactured products.

2. Instructions for care and maintenance.
 - a. Manufacturer's recommendation for types of cleaning agents and methods.
 - b. Cautions against cleaning agents and methods which are detrimental to product.
 - c. Recommend schedule for cleaning and maintenance.
- C. Content, for moisture protection and weather-exposed products:
 1. Manufacturer's data, giving full information on products.
 - a. Applicable standards.
 - b. Chemical composition.
 - c. Details of installation.
 2. Instructions for inspection, maintenance and repair.
- D. Additional requirements for maintenance data: Respective sections of Specifications.

1.06 MANUAL FOR EQUIPMENT AND SYSTEMS

- A. Submit six (6) copies of complete manual in final form in addition to two (2) electronic copies (PDF). .
- B. Content, for each unit of equipment and system, as appropriate:
 1. Description of unit and component parts.
 - a. Function, normal operating characteristics, and limiting conditions.
 - b. Performance curves, engineering data and tests.
 - c. Complete nomenclature and commercial number of replaceable parts.
 - d. Summary of information listed on equipment and motor data plates.
 2. Operating procedures:
 - a. Start-up, break-in, routine and normal operating instructions.
 - b. Regulation, control, stopping, shut-down and emergency instructions.
 - c. Summer and winter operating instructions.
 - d. Special operating instructions.
 3. Maintenance procedures:
 - a. Routine operations.
 - b. Guide to "trouble-shooting".
 - c. Disassembly, repair and reassembly.
 - d. Alignment, adjusting and checking.
 4. Servicing and lubrication required.
 5. Manufacturer's printed operating and maintenance instructions.

6. Description of sequence of operation by control manufacturer.
 7. Original manufacturer's parts list, illustrations, assembly drawings and diagrams required for maintenance.
 - a. Predicted life of parts subject to wear.
 - b. Items recommended to be stocked as spare parts.
 8. As-installed control diagrams by controls manufacturer.
 9. Each Contractor's coordination drawings.
 10. Charts of valve tag numbers, with location and function of each valve.
 11. List of original manufacturer's spare parts, manufacturer's current prices and recommended quantities to be maintained in storage.
 12. Other data as required under pertinent sections of specifications.
 13. Approved record shop drawings with all corrections made, and a copy of the warranty statement, check-out memo, and demonstration test procedures and certification.
- C. Content, for each electric and electronic system, as appropriate:
1. Description of system and component parts.
 - a. Function, normal operating characteristics, and limiting conditions.
 - b. Performance curves, engineering data and tests.
 - c. Complete nomenclature and commercial number of replaceable parts.
 2. Circuit directories of panelboards.
 - a. Electrical service
 - b. Controls
 3. As installed color coded wiring diagrams.
 4. Operating procedures:
 - a. Routine and normal operating instructions.
 - b. Sequences required.
 - c. Special operating instructions.
 5. Maintenance procedures:
 - a. Routine operations.
 - b. Guide to "trouble-shooting.
 - c. Disassembly, repair and reassembly.
 - d. Adjustment and checking.
 6. Manufacturer's printed operating and maintenance instructions.
 7. List of original manufacturer's spare parts, manufacturer's current prices, and recommended quantities to be maintained in storage.

- 8. Other data as required under pertinent sections of specifications.
- D. Prepare and include additional data when the need for such data becomes apparent during instruction of Owner's personnel.
- E. Additional requirements for operating and maintenance data: Respective sections of Specifications.

1.07 SUBMITTAL SCHEDULE

- A. Submit two (2) copies of preliminary draft of proposed formats and outlines of contents of Operation and Maintenance Manuals within 90 days after Notice to Proceed. Sets of example O&M manuals are available for examination upon request.
- B. Submit two (2) copies of completed data in preliminary form no later than 20 days following Engineer's review of the last shop drawing of a product and/or other submittal specified under Section 01340, but no later than delivery of equipment. One copy will be returned with comments to be incorporated into the final copies and the other copy will be retained on-site for use in any early training.
- C. Submit six (6) copies of approved manual in final form directly to the offices of the Engineer within 10 days after the reviewed copy or last item of the reviewed copy is returned.
- D. Provide six (6) copies of addenda to the operation and maintenance manuals as applicable and certificates as specified within 30 days after final inspection.

1.08 INSTRUCTION OF OWNER'S PERSONNEL

- A. Prior to demonstration test, fully instruct Owner's designated operating and maintenance personnel in operation, adjustment and maintenance of products, equipment and systems.
- B. Operating and maintenance manual shall constitute the basis of instruction. Review contents of manual with personnel in full detail to explain all aspects of operations and maintenance.
- C. Instructors shall be fully qualified personnel as outlined within the individual equipment specifications. If no specific training specifications are listed with the equipment, the Contractor shall provide the instruction with qualified Contractor personnel.
- D. The instructors shall provide for and prepare lesson scopes and handouts for up to twenty individuals designated by the Owner that outline the items to be covered. Three separate sessions, two for operation and one for maintenance instruction shall be provided consecutively to accommodate shift schedules. Handouts shall be submitted to the Owner with at least one week's notice prior to the training sessions.

- E. All instruction sessions shall be videotaped with portable video cameras and media supplied by the Contractor. Videotaping shall be made by the Contractor under the direction of the Owner with DVD compatible equipment.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

**SECTION 01740
WARRANTIES AND BONDS**

PART 1 - GENERAL

1.01 DESCRIPTION

A. Scope of Work:

1. Compile specified warranties and bonds, as in the General Conditions and as specified in these Specifications.
2. Submit to Engineer for review and transmittal to Owner.
3. The Contractor shall provide a two-year warranty on all workmanship and materials as a part of this Work.

B. Related Work Described Elsewhere:

1. Contract Closeout: Section 01700

1.02 SUBMITTAL REQUIREMENTS

A. Assemble warranties, bonds and service and maintenance contracts, executed by each of the respective manufacturers, suppliers, and subcontractors.

B. Number of signed copies required: Two (2) each.

C. Table of Contents: Neatly typed, in orderly sequence. Provide complete information for each item.

1. Product or work item.
2. Firm, with name of principal, address and telephone number.
3. Scope.
4. Date of beginning of warranty, bond or service and maintenance contract.
5. Duration of warranty, bond or service maintenance contract.
6. Provide information for Owner's personnel: Instances which might affect the validity or warranty or bond.
7. Contractor, name of responsible principal, address and telephone number.

1.03 FORM OF SUBMITTALS

A. Prepare in duplicate packets.

- B. Format:
 - 1. Size 8 1/2 inches x 11 inches, punch sheets for standard three-post binder. Fold larger sheets to fit into binders. The Contractor shall submit warranties in a separate/stand-alone binder.
 - 2. Cover: Identify each packet with typed or printed title "WARRANTIES AND BONDS". List:
 - a. Title of Project.
 - b. Name of Contractor.
- C. Binders: Commercial quality, three (3) D-ring binder, with durable and cleanable plastic covers and maximum ring size of two (2) inches.

1.04 WARRANTY SUBMITTALS REQUIREMENTS

- A. For all material, submit a warranty from the product manufacturer. The manufacturer's warranty period shall be concurrent with Contractor's for one (1) year, unless otherwise specified, commencing at the time of final acceptance by Owner.
- B. The Contractor shall be responsible for obtaining certificates for material warranty for all major items and coatings which list for more than \$1,000. The Engineer reserves the right to request warranties for material not classified as major. The Contractor shall still warrant material not considered to be "major" in the Contractor's one-year warranty period even though certificates of warranty may not be required.
- C. In the event that the material manufacturer or supplier is unwilling to provide a one (1) year warranty commencing at the time of Owner acceptance, the Contractor shall obtain from the manufacturer a two (2) year warranty commencing at the time of equipment delivery to the job site. This two-year warranty from the manufacturer shall not relieve Contractor of the one-year warranty starting at the time of Owner acceptance of the equipment.
- D. All major equipment including but not limited to pumps, emergency generator, generator fuel tank, roof and VFDs shall have extended warranties as specified in the appropriate specification section. Additionally all major equipment and coatings valued at more than \$1,000 replacement cost shall contain a certificate from the manufacturer verifying correct installation and operational demonstration by the Contractor prior to final acceptance by the Owner.
- E. Owner shall incur no labor or equipment cost during the guarantee period.
- F. Guarantee shall cover all necessary labor, and materials resulting from faulty or inadequate design, improper assembly or erection, defective workmanship and materials, leakage, breakage or other failure of all equipment and components furnished by the Manufacturer.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

**SECTION 02020
DEMOLITION**

PART 1 - GENERAL

1.01 SCOPE OF WORK

- A. The Contractor shall furnish all labor, materials, equipment and services necessary to complete all demolition work as shown on the Drawings and as specified herein.

1.02 GENERAL DEMOLITION

- A. As related to the Work, unless otherwise directed in the Contract Documents, the Contractor shall:

1. Demolish, remove and properly dispose of all structures indicated, trash, rubbish, slabs, sidewalks and other improvements associated with the structures from the project site.
2. Remove the materials from the demolition site in accordance with federal, state and local regulations.
3. Disconnect and cap all utility services before demolition.
4. Perform site clearance, grading and restoration.
5. Complete the demolition work in accordance with the plans and these technical specifications and any special provisions included in the Contract Documents.

1.03 PROCESS STRUCTURE, PIPING, AND EQUIPMENT DEMOLITION

- A. As related to the Work, unless otherwise directed in the Contract Documents, the Contractor shall:

1. Demolish, remove, and properly dispose of the structures/piping/equipment.
2. The Contractor shall also be responsible for providing the Owner with any and all paperwork associated with the cleaning, demolition, or disposal of the process structures/piping/equipment that is requested or required for Owner records.

1.04 PROTECTION OF PROPERTIES

- A. Debris and Mud

1. The Contractor shall be responsible for removing any demolition debris or mud from any street, alley or right-of-way resulting from the execution of the demolition work. Any cost incurred by Owner in cleaning up any litter or mud shall be charged to the Contractor and be deducted from the funds due for the work.
2. Littering of the site shall not be permitted.

3. All waste materials shall be promptly removed from the site.
- B. Noise
1. All construction equipment used in conjunction with this project shall be in good repair and adequately muffled. The Contractor shall comply with noise pollution ordinances of the City.
- C. Dust Control
1. The Contractor shall take appropriate actions to minimize atmospheric pollution. To minimize atmospheric pollution, the Owner, or his designated representative shall have the authority to require that reasonable precautions be taken to prevent particulate matter from becoming airborne. Such reasonable precautions shall include, but not limited to:
 - a. The use of water or chemical for control of dusts in the demolition of existing buildings or structures, construction operations, the grading of roads, or the clearing of land.
 - b. Covering, at all times when in motion, open-bodied trucks transporting materials likely to give rise to airborne dusts.
- D. Requirements for the Reduction of Fire Hazards
1. The Contractor shall be responsible for having and maintaining the correct type and class of fire extinguisher on site. When a cutting torch or other equipment that might cause a fire is being used, a fire extinguisher shall be placed close at hand for instant use.
 2. No fires of any kind will be permitted in the demolition work area.
 3. No material obstructions or debris shall be placed or allowed to accumulate within fifteen feet of any fire hydrants shall be accessible at all times.
 4. Debris shall not be allowed to accumulate on roofs, floors, or in areas outside of and around any structure being demolished. Excess debris and materials shall be removed from the site as the work progresses.
- E. Protection of Public Utilities
1. The Contractor shall not damage existing fire hydrants, street, lights, power poles, telephone poles, fire alarm boxes, wire cables, pole guys, underground utilities or other appurtenance in the vicinity of the demolition sites. The Contractor shall pay for temporary relocation of utilities, which are relocated at the Contractor's request for his convenience.
- F. Protection of Adjacent Property
1. The Contractor shall not damage or cause to be damaged any public right-of-way, structures, parking lots, drives, streets, sidewalks, utilities, lawns or any other property adjacent to project sites for demolition whether or not the property is scheduled for future demolition. The Contractor shall provide such

sheeting and shoring as required to protect adjacent during demolition. Care must also be taken to prevent the spread of dust and flying particles.

G. Site Security

1. Owner assumes no responsibility for loss, theft, or damage to the work, tools, equipment, and construction. In the instance of any such loss, theft, or damage, the Contractor shall be responsible to renew, restore, replace or remedy the work, tools, equipment, and construction without additional costs to Owner.
2. The Contractor, at his own cost, may provide watchmen services and other means of site security.
3. Site parked equipment, operable machinery, and hazardous parts of the work in progress subject to mischief and accidental operation, shall be inaccessible, locked, or otherwise made inoperable when left unattended.

H. Measurements

1. Any measurements, scales and indication of volumes of materials referenced within these Specifications, plans, or pictorials are provided only as a demonstration of work to be provided by the Contractor. It is the Contractor's responsibility to field verify any and all measurements necessary for the formulation of his bid.

1.05 RISK LOSS

- A. The Contractor shall accept the site in its present condition and shall inspect the site for its character and the type of facilities to be demolished. Owner assumes no responsibility for the condition of existing buildings, structures, and other property within the demolition area, or the condition of the property before or after the solicitation of proposals. No adjustment of proposal price or allowance for any change in conditions that may occur after the execution of contract will be allowed.

1.06 PERMITS AND FEES

- A. The Contractor shall obtain all the necessary permits and pay all permit fees that may be required by City, the State of Florida, or any utility having jurisdiction in conjunction with the demolition work.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.01 DEMOLITION SCHEDULE

- A. The Contractor shall be responsible for providing the Owner, or his designated representative, with a minimum of 3 weeks advance notification prior to beginning the execution of demolition of any structure.

3.02 SALVAGE OF DEMOLITION MATERIALS

- A. The Contractor shall be allowed to salvage demolition materials only from property owned by City.
- B. The Contractor may recycle demolition debris at a licensed or permitted recycling center; however, all other debris must be disposed of at a licensed or permitted disposal facility.
- C. All building materials and equipment resulting from this work shall become the property of the Contractor, and shall be removed from the premises at once. Owner reserves the right to remove salvage items for use by Owner.

3.03 DEMOLITION AND REMOVALS

- A. Structures and Equipment/Material
 - 1. Any part of a structure, whether structural, collateral, or accessory, which has become unstable through removal of other parts, shall be removed as soon as practicable. No unstable part shall be left free-standing or inadequately braced against all reasonably possible causes of collapse at the end of the any day's work.
 - 2. All masonry or steel under floor structures, footings, and foundations shall be completely removed from the site. The under floor areas are to be inspected and approved by the Owner, or its designated representative, before backfilling, if required, is started. The Contractor shall ensure that no under floor excavation will remain open and exposed for more than 24 hours. Failure to do so may result in re-excavation of the under floor areas at the Contractor's expense.
 - 3. All piping to be demolished shall be completely removed from the ground and properly disposed of.
 - 4. All electrical equipment and associated wiring, conduits, boxes, etc. currently out of service and to be removed from service shall be demolished.

3.04 DISPOSAL OF DEMOLITION DEBRIS AND SOLID WASTE

- A. All materials, rubbish, and trash shall be removed from the demolition area leaving the under floor and demolition area free of debris. Any cost incurred by Owner in cleaning up such materials and debris left behind shall be deducted from funds due the Contractor under this contract.
- B. All debris and solid waste shall be delivered by the Contractor to an approved disposal facility licensed in accordance with state and/or local regulations, laws, and zoning. The Contractor shall be responsible to pay all fees for waste disposal. The Contractor shall submit to the Owner, or his designated representative copies of all disposal tickets for each structure demolished, where available, which identify the specific address of the origin of the debris associated with each ticket. The cost of all fees shall be considered incidental to the demolition.

3.05 BACKFILL, GRADING, AND CLEAN UP

- A. When site conditions permit, as determined by the Owner, or his designated representative, on-site soil shall be used as backfill material. The top 9-12 inches of topsoil within the limits of construction may be stripped and stockpiled on site for use as final topsoil and grading material. If adequate topsoil is not available on site, the Contractor shall bring in enough topsoil from off-site to place a minimum 8-inch cover within the limits of construction. Excess excavation materials shall be removed from the site. Topsoil material shall not be permitted as deep fill materials. Any borrow or fill material shall be approved by the Owner, or his designated representative before and during the placing of the material. All excavations shall be backfilled with acceptable material and compacted according to the requirements of Section 02220.
- B. All additional fill material shall be of equal quality to the soil adjacent to the excavation, and free of rubble or organic matter. The Contractor shall provide for a minimum depth of 8 inches of topsoil over the excavated area. There shall be no payment for additional fill material, which shall be considered incidental to the demolition bid price. Additional fill material shall be acceptable fill material that meets the requirements of Section 02220.
- C. The Contractor shall employ hand labor where the use of power machinery is unsafe or unable to produce a finished job. Hand labor shall also be used to clean the site of any debris.
- D. The site shall be graded to conform to all surrounding areas and shall be finished to have a uniform surface that shall not permit pooling of water. The Contractor shall grade and shape the site to drain; complete fine grading and final clean up as part of the lump sum for demolition.
- E. Before acceptance of the demolition work, the Contractor shall remove all unused material and rubbish from the site of the work, remedy any objectionable conditions the Contractor may have created on private property, and leave the right-of-way in a neat and presentable condition. The Contractor shall not make agreements that allow salvaged or unused material to remain on private property. All ground occupied by the Contractor in connection with the work shall be restored. Restoration shall include appropriate smoothing to its original condition. Final cleaning up shall be subject to approval of the Owner, or his designated representative, and in accordance with applicable regulations.

3.06 ELECTRIC AND GAS UTILITY DISCONNECTIONS

- A. The Contractor will coordinate utility disconnections with the utility companies.

3.07 SAFETY AND FENCING

- A. The Contractor shall comply with all applicable current federal, state and local safety and health regulations.

- B. The Contractor shall furnish and place a safety fence around the site of the work adequate to secure the demolition site, including any resulting debris or excavation, and to prevent pedestrian access. The fencing, including all materials, shall be considered incidental to the demolition. The safety fence shall remain in place until the demolished materials are removed from the site and all holes or excavated areas are backfilled. The safety fencing material shall remain the property of the Contractor.

3.08 DAILY CLEAN UP OF RIGHT-OF-WAY AND PRIVATE PROPERTY

- A. At the end of each workday, the Contractor shall clean sidewalks, streets, and tank of any debris caused by the demolition operation.

END OF SECTION

**SECTION 02100
SITE PREPARATION**

PART 1 - GENERAL

1.01 SCOPE OF WORK

- A. This Section covers clearing, grubbing, and stripping within the limits of the Utility Corridor as shown on the Drawings, complete as specified herein.
- B. The Contractor's attention is directed to any soil erosion and sediment control ordinances in force. The Contractor shall comply with all applicable sections of these ordinances and install protective measures such as silt fences, hay bales or other erosion and sediment control devices prior to beginning the clearing and grubbing.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.01 CLEARING

- A. The surface of the ground, for the area to be cleared and grubbed shall be completely cleared of all timber, brush, stumps, roots, grass, weeds, rubbish, and all other objectionable obstructions resting on or protruding through the surface of the ground. Where construction necessitates the removal of trees, the Contractor shall obtain all required permits. Clearing operations shall be conducted so as to prevent damage to existing structures and installations, and to those under construction, and so as to provide for the safety of employees and others.
- B. As determined by the Owner or Engineer, where excavation, tree removal, stripping or trimming may result in damage to existing trees, shrubs or bushes, the Contractor shall employ a licensed tree surgeon/service to oversee the work and provide protection of the trees. The tree surgeon/service shall submit a detailed plan of action to the Owner prior to any work.

3.02 GRUBBING

- A. Grubbing shall consist of the complete removal of all stumps, roots larger than 1-1/2 inches in diameter, matted roots, brush, timber, logs, and any other organic or metallic debris not suitable for foundation purposes which are resting on, under or protruding through the surface of the ground; removal shall be to a depth of 18-inches below the subgrade. All depressions excavated below the original ground surface for or by the removal of such objects, shall be refilled with suitable materials and compacted to a density conforming to the surrounding ground surface.

3.03 STRIPPING

- A. Topsoil shall be stockpiled as directed by the Owner. Stockpiled topsoil shall be protected until it is placed as specified. The Contractor shall dispose of any topsoil remaining after all work is in place, unless directed otherwise by the Owner.

3.04 DISPOSAL OF CLEARED AND GRUBBED MATERIAL

- A. The Contractor shall dispose of all material and debris from the clearing and grubbing operation by hauling such material and debris away to an approved landfill. Disposal by burning and burial will not be permitted. The cost of disposal (including hauling) of cleared and grubbed material and debris shall be considered a subsidiary obligation of the Contractor; the cost of which shall be included in the Contract Price.

3.05 PRESERVATION OF TREES

- A. Those trees which are designated for preservation shall be carefully protected from damage. The Contractor shall erect barricades, guards, and enclosures as required for the protection of the trees during all construction operations.

3.06 PRESERVATION OF DEVELOPED PRIVATE PROPERTY

- A. The Contractor shall exercise extreme care to avoid unnecessary disturbance of developed private property as applicable. Trees, shrubbery, gardens, lawns, and other landscaping, which in the opinion of the Owner or Engineer must be removed, shall be replaced and replanted to restore the area to the condition existing prior to construction; such work shall be at no additional cost to the Owner.
- B. All soil preservation procedures and replanting operations shall be under the supervision of a nursery representative experienced in such operations.
- C. Improvements to the land such as fences, walls, outbuildings, and other structures which of necessity must be removed, shall be replaced with equal quality materials and workmanship at no additional cost to the Owner.
- D. The Contractor shall clean up and restore the construction site/areas adjacent to developed private property immediately after construction is completed.

3.07 PRESERVATION OF PUBLIC PROPERTY

- A. The appropriate portions of Paragraphs 3.05, 3.06, and 3.07 of this Section shall apply to the preservation and restoration of public lands, parks, rights-of-way, easements, and all other damaged areas.

END OF SECTION

**SECTION 02140
DEWATERING**

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Scope of Work: The Work to be performed under this section shall include furnishing all equipment and labor necessary to remove storm or subsurface waters from excavation areas and disposal of same in accordance with the requirements set forth, as shown on the Drawings and as stated in the respective geotechnical report if furnished under separate cover.
- B. Dewatering Discharge Permit: The Contractor shall be responsible for permitting the discharge of dewatering effluent to surface water, or sanitary sewer, if needed for this project. The Contractor shall also be responsible for the sampling and testing of groundwater and dewatering effluent as necessary to meet the permit requirements and verify compliance. The Contractor shall provide the Owner with its plan for operating the dewatering system within 10 working days after notice to proceed, including information regarding the Contractor's plans to discharge dewatering effluent, if applicable. The Contractor shall be responsible for operation of the dewatering system in a manner that allows the Contractor to obtain valid water samples for analytical testing, including control of turbidity, at the required intervals.

1.02 QUALITY ASSURANCE

- A. Disposal of dewatering water is considered a means and method of the Contractor, and must be conducted in conformance with the FDEP and Owner environmental regulations/requirements. The Contractor will retain a private firm to provide water quality testing of dewatering effluent. The testing firm will advise the Contractor where dewatering effluent may be discharged based on the results of their quality testing. Should the Contractor select to discharge that water in non-conformance with the testing firm's recommendations, the Contractor shall be solely responsible for all associated fines/actions, including reimbursement of any fines levied against the City or others.
- B. Any non-contaminated dewatering effluent that is going to be discharged to a surface water body requires the "Generic Permit for the Discharge of Produced Groundwater from Any Non-Contaminated Site Activity", (Chapter 62-621.300(2), FAC). [Generic Permit]

PART 2 - PRODUCTS (NOT APPLICABLE)

PART 3 - EXECUTION

3.01 DEWATERING

- A. The Contractor shall provide adequate equipment for the removal of storm or subsurface waters which may accumulate in the excavation. Within and adjacent to

residential areas, all pumping equipment shall be electrically powered without the use of internal combustion engines or generators associated unless approved in writing by the Owner.

- B. If subsurface water is encountered, the Contractor shall utilize suitable equipment to adequately dewater the excavation so that it will be dry for work and pipe laying. A wellpoint system or other Engineer accepted dewatering method shall be utilized if necessary to maintain the excavation in a dry condition for preparation of the trench bottom and for pipe laying.
- C. Dry condition shall be defined as groundwater table lowered to a minimum of one (1) foot below the proposed trench bottom or trench bottom soils within 2% optimum moisture content.
- D. Dewatering by trench pumping will not be permitted if migration of fine grained natural material from bottom, side walls, or bedding material will occur.
- E. In the event that satisfactory dewatering cannot be accomplished due to subsurface conditions or where dewatering could damage existing structures, the Contractor shall obtain Owner review and approval of wet trench construction or procedure before commencing construction.
- F. Dewatering shall be conducted in such a manner as to preserve the natural undisturbed bearing capacity of the subgrade soils at proposed bottom of excavation.
- G. The Contractor shall furnish all materials and equipment and perform all work required to install and maintain the drainage systems for handling groundwater and surface water encountered during construction of structures, pipelines and compacted fills.
- H. The Contractor is responsible for control of turbidity and pH of the dewatering effluent, and is responsible for the implementation of controls and/or structures, or technology strategies, to maintain acceptable turbidity and pH levels of the effluent prior to discharge.
- I. Continuous pumping will be required as long as water levels are required to be below natural levels.

3.02 DISPOSAL

- A. Disposal of dewatering water is considered a means and method of the Contractor, and must be conducted in conformance with the FDEP and City environmental regulations/requirements. Contractor is responsible for acquiring all permits required to discharge the water and shall protect waterways from turbidity during the operation.
- B. No flooding of streets, roadways, driveways or private property will be permitted. If engine-driven pumps are allowed by the Owner, engines driving dewatering pumps shall be equipped with residential type mufflers.
- C. Responsibility for turbidity control to prevent off-site sedimentation remains with the contractor until infiltration to water table occurs, or until received by a wetland or surface water body.

- D. Discharge water shall be clear, with no visible soil particles. Discharge from dewatering shall be disposed of in such a manner that it will not interfere with the normal drainage of the area in which the work is being performed, create a public nuisance or form ponding. The operation shall not cause damage to any portion of the work completed, in progress, to the surface of streets or to private property. The dewatering operation shall comply with the requirements of National Pollutant Discharge Elimination System (NPDES) and other state and City regulatory agencies. Additionally, the Contractor shall obtain proper right of entry where private property will be involved.

END OF SECTION

SECTION 02200 EARTHWORK

PART 1 - GENERAL

1.01 SUMMARY OF WORK

- A. This Section includes the following:
 - 1. Preparing and grading subgrades for fill areas, ponds, swales, slabs-on-grade, walks, pavements, grassed areas and landscaping.
 - 2. Subbase course for pavement areas.
- B. Related Sections: The following Sections contain requirements that relate to this Section:
 - 1. Section 02100 - Site Preparation
 - 2. Section 03300 - Cast-in-Place Concrete

1.02 REFERENCES

- A. Florida Department of Transportation "Standard Specifications for Road and Bridge Construction, latest edition".

1.03 DEFINITIONS

- A. Excavation consists of the removal of material encountered to subgrade elevations and the reuse or disposal of materials removed.
- B. Subgrade: The uppermost surface of an excavation or the top surface of a fill or backfill immediately below subbase, or topsoil materials.
- C. Borrow: Soil material obtained off-site when sufficient approved soil material is not available from excavations.
- D. Subbase Course: The layer placed between the subgrade and base course in a paving system.
- E. Base Course: The layer placed between the subbase and surface pavement in a paving system.
- F. Unauthorized excavation consists of removing materials beyond indicated subgrade elevations or dimensions without direction by the Engineer. Unauthorized excavation, as well as remedial work directed by the Engineer, shall be at the Contractor's expense.
- G. Structures: Footings, foundations, flow control walls slabs, tanks, curbs, mechanical and electrical appurtenances, or other man made stationary features constructed above or below ground surface.
- H. Utilities include on-site underground or aboveground pipes, conduits, ducts, cables and power poles.

1.04 SUBMITTALS

- A. General: Submit the following according to the Conditions of the Contract and Division 01 Specification Sections.
 - 1. Product data for the following:
 - a. Each type of plastic warning tape.
 - 2. Samples of the following:
 - a. 20-lb samples, sealed in air-tight containers, of each proposed fill and backfill material from on-site or borrow sources.
 - 3. Test Reports: In addition to test reports required under field quality control submit the following:
 - a. Laboratory analysis of each soil material proposed for fill and backfill from on-site and borrow sources.
 - b. One optimum moisture-maximum density curve for each soil material.
 - c. Report of actual unconfined compressive strength and/or results of bearing tests of each stratum tested.

1.05 QUALITY ASSURANCE

- A. Codes and Standards: Perform earthwork complying with requirements of authorities having jurisdiction.
- B. Testing and Inspection Service: The Owner will provide a qualified independent geotechnical engineering testing agency to classify proposed on-site and borrow soils to verify that soils comply with specified requirements and to perform required field and laboratory testing.
- C. Preconstruction Conference: Before commencing earthwork, the Contractor shall meet with representatives of the governing authorities, Owner, RPR, Engineer, Geotechnical Engineer, independent testing agency, and other concerned entities. Review earthwork procedures and responsibilities including testing and inspection procedures and requirements. Notify participants at least 3 working days prior to convening conference. Record discussions and agreements and furnish a copy to each participant.

1.06 PROJECT CONDITIONS

- A. Existing Utilities: Do not interrupt existing utilities serving facilities occupied by the Owner or others except when permitted in writing by the utility agency owner and then only after acceptable temporary utility services have been provided.
 - 1. Provide a minimum of 48-hours' notice to the Owner, including approvals as required by the utility agency owner for any service interruption, and receive written notice to proceed by the Owner before interrupting any utility.

PART 2 - PRODUCTS

2.01 SOIL MATERIALS

- A. General: Provide approved borrow soil materials from off-site when approved soil materials are not available from on-site excavations.
 - 1. Satisfactory Soil Materials: ASTM D2487 soil classification groups GW, GP, GM, SW, SP and SM; free of rock or gravel larger than 2 inches in any dimension, debris, waste, organics (muck or peat), vegetation and other deleterious materials.
 - 2. Unsatisfactory Soil Materials: ASTM D2487 soil classification groups GC, SC, ML, MH, CL, CH, OL, OH, and PT.
 - 3. Backfill and Fill Materials: Satisfactory soil materials.
 - 4. Aggregate for stabilizing Subbase: Conforming to FDOT Section 911.
 - 5. Bedding Material: Natural or crushed gravel and sand, ASTM D2940, with 100 percent passing a 1-inch sieve and not more than 8 percent passing a No. 200 sieve.
 - 6. Impervious Fill: clayey gravel and sand mixture capable of compacting to a dense state.

2.02 ACCESSORIES

- A. Detectable Warning Tape: Acid- and alkali-resistant polyethylene film warning tape manufactured for marking and identifying underground utilities, 6-inches wide and 4 mils thick, continuously inscribed with a description of the utility, with metallic core encased in a protective jacket for corrosion protection, detectable by metal detector when tape is buried up to 2-feet 6 inches deep.
 - 1. Tape Colors: Provide tape colors to utilities as follows:
 - a. Red: Electric
 - b. Yellow: Gas, oils, steam, and dangerous materials.
 - c. Orange: Telephone and other communications.
 - d. Blue: Water Systems.
 - e. Green: Sewer systems.
- B. Non-detectable Warning Tape with 12 gauge locating wire.

PART 3 - EXECUTION

3.01 PREPARATION

- A. Protect structures, utilities, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.
- B. Power poles or other utilities required to be supported and/or protected as per the governing utility owner, shall require the Contractor to coordinate with and pay for

any additional measures employed beyond the Contractor's means and methods to protect the utility and shall be at no additional expense to the Owner.

- C. Protect subgrades and foundation soils against freezing temperatures or frost. Provide protective insulating materials as necessary.
- D. Provide erosion control measures including silt fences to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent wetlands.
- E. Tree protection is specified in Section 02100, Site Preparation.

3.02 DEWATERING

- A. Dewatering shall be in accordance with Section 02140, Dewatering.
- B. Prevent surface water and subsurface or ground water from entering excavations, from ponding on prepared subgrades, and from flooding the project site and surrounding areas.
- C. Protect subgrades and foundation soils from softening and damage by rain or water accumulation.

3.03 EXCAVATION GENERAL

- A. Explosives: Do not use explosives.
- B. Unclassified Excavation: Excavation is unclassified and includes excavation to required subgrade elevations regardless of the character of materials and obstructions encountered.

3.04 STABILITY OF EXCAVATIONS

- A. General: Comply with local codes, ordinances, and requirements of agencies having jurisdiction to maintain stable excavations.

3.05 EXCAVATION FOR STRUCTURES

- A. Excavate to indicated elevations and dimensions within a tolerance of plus or minus 0.10 foot. Extend excavations a sufficient distance from structures for placing and removing concrete formwork, installing services and other construction, and for inspection.
- B. Excavations for Footings and Foundations: Do not disturb bottom of excavation. Excavate by hand to final grade just before placing concrete reinforcement. Trim bottoms to required lines and grades to leave solid base to receive other work.
- C. Excavation for Underground Tanks, Basins, and Mechanical or Electrical Appurtenances: Excavate to elevations and dimensions indicated within a tolerance of plus or minus 0.10 foot. Do not disturb bottom of excavations intended for bearing surface.

3.06 EXCAVATION FOR WALKS AND PAVEMENTS

- A. Excavate surface under pavements to indicated cross-sections, elevations and grades.

3.07 APPROVAL OF SUBGRADE

- A. Notify the RPR when excavations have reached required subgrade.
- B. When the RPR determines that unforeseen unsatisfactory soil is present, continue excavation and replace with compacted backfill or fill material as directed.
 - 1. Unforeseen additional excavation and replacement material will be paid according to the Contract provisions for changes in Work.
- C. Reconstruct subgrades damaged by freezing temperatures, frost, rain, accumulated water, or construction activities, as directed by the RPR.

3.08 UNAUTHORIZED EXCAVATION

- A. When unsuitable soil is encountered at the bottom of excavation (bottom of trenches, foundations, structures and pavements areas), the Engineer must be notified to assess and approve overexcavation and replacement of the unsuitable soil.
- B. Overexcavate and remove all unsuitable material to a depth and lateral extent indicated by the Engineer and replace with suitable materials, placed in 12-inch lifts when loose, compacted to the corresponding density requirements for the bottom of excavation.
- C. Fill unauthorized excavation under foundations or wall footings by extending indicated bottom elevation of concrete foundation or footing to excavation bottom, without altering required top elevation. Lean concrete fill may be used to bring elevations to proper position, when acceptable to the Engineer.
 - 1. Fill unauthorized excavations under other construction as directed by the Engineer.
- D. Where indicated widths of utility trenches are exceeded, provide stronger pipe, or special installation procedures, as necessary.

3.09 STORAGE OF SOIL MATERIALS

- A. Stockpile excavated materials acceptable for backfill and fill soil materials, including acceptable borrow materials. Stockpile soil materials without intermixing; ensure that soil is separated during lake excavations. Place, grade, and shape stockpiles to drain surface water. Cover to prevent wind-blown dust.
 - 1. Stockpile soil materials away from edge of excavations. Do not store within drip line of trees indicated to remain.

3.10 BACKFILL

- A. Backfill excavations promptly, but not before completing the following:
 - 1. Acceptance of construction below finish grade.

2. Surveying locations of underground utilities for record documents.
 - a. Testing, inspection, and approval of underground utilities.
 - b. Concrete formwork removal.
 - c. Removal of trash and debris from excavation.
 - d. Removal of temporary shoring and bracing, and sheeting.
 - e. Installing permanent or temporary horizontal bracing on horizontally supported walls.

3.11 PROOFROLLING

- A. Proofroll and compact exposed stripped subgrade using a vibratory roller with minimum static drum weight of 4 tons and minimum impact energy of 36,000 lb, i.e., DYNAPAC CA-25 or equivalent. Dewatering may be necessary before proofrolling.
- B. Make a minimum of 10 overlapping passes in a criss-cross pattern in all building and paved areas. Compact subgrade to 95 percent modified Proctor dry density (ASTMD-15857) to a minimum depth of 2.0 feet.

3.12 FILL

- A. Preparation: Remove vegetation, topsoil, debris organic material (muck or peat), wet and unsatisfactory soil materials, obstructions, and deleterious materials from ground surface prior to placing fills.
 1. Plow strip, or break up sloped surfaces steeper than 1 vertical to 4 horizontal so fill material will bond with existing surface.
- B. Place fill material in layers to required elevations for each location listed below.
 1. Under grass, use satisfactory excavated or borrow material.
 2. Under walks and fence line slabs use subbase or base material, or satisfactory excavated or borrow material.
 3. Under asphalt concrete base course, use stabilized fill.
 4. For building pads, use satisfactory excavated or borrow soil material.

3.13 MOISTURE CONTROL

- A. Uniformly moisten or aerate subgrade and each subsequent fill or backfill layer before compaction to within 2 percent of optimum moisture content.
- B. Do not place backfill or fill material on surfaces that are muddy, oily frozen, or contain frost or ice.
- C. Remove and replace, or scarify and air-dry, satisfactory soil material that is too wet to compact to specified density.
 1. Stockpile or spread and dry the excavated wet “satisfactory soil material”.

3.14 COMPACTION

- A. Place backfill and fill materials in layers not more than 12-inches thick, when loose for material compacted by heavy compaction equipment, and not more than 6-inches thick, when loose for material compacted by hand-operated tampers.
- B. Place backfill and fill materials evenly on all sides of structures to required elevations. Place backfill and fill uniformly along the full length of each structure.
- C. Percentage of Maximum Dry Density Requirements: Compact soil to not less than the following percentages of maximum dry density according to ASTM D 1557: Under structures, building slabs and steps, and pavements, compact the top 12-inches below subgrade and each layer of backfill or fill material at 98 percent maximum dry density.
 - 1. Under walkways, compact top 6-inches below subgrade and each layer of backfill or fill material at 95 percent maximum dry density.
 - 2. Under lawn or unpaved areas, compact top 6-inches below subgrade and each layer of backfill or fill material to 90 percent maximum dry density.

3.15 GRADING

- A. General: Uniformly grade areas to a smooth surface, free from irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.
 - 1. Provide a smooth transition between existing adjacent grades and new grades.
 - 2. Cut out soft spots, fill low spots, and trim high spots to conform to required surface tolerances.
- B. Site Grading: Slope grades to direct water away from buildings and to prevent ponding. Finish subgrades to required elevations with the following tolerances:
 - 1. Lawn or Unpaved Areas: Plus or minus 0.10 foot.
 - 2. Walks: Plus or minus 0.10 foot.
 - 3. Pavements: Plus or minus ½ inch.
- C. Grading within Building Lines: Finish subgrade to a tolerance of ½ inch when tested with a 10-foot straightedge.

3.16 SUBBASE COURSES

- A. Under pavements, place subbase course material on prepared subgrades. Place base course material over subbase courses to pavements.
 - 1. Stabilize and compact subbase courses at optimum moisture content to required grades, lines, cross sections, and thickness to not less than 95 percent of ASTM D 4254 relative density. Stabilize per FDOT Specifications to a minimum Florida Bearing Value of 75 psi or limerock bearing ratio of 40.
 - 2. Shape subbase and base to required crown elevations and cross-slope grades.

3.17 FIELD QUALITY CONTROL

- A. Testing Agency Services: The Owner will provide a testing agency who will inspect and test each subgrade and each fill or backfill layer. Do not proceed until test results for previously completed work verify compliance with requirements.
1. Perform field-in-place density tests according to ASTM D 1556 (sand cone method), ASTM D 2167 (rubber balloon method), or ASTM D 2937 (drive cylinder method), as applicable.
 - a. Field in-place density tests may also be performed by the nuclear method according to ASTM D 2922, providing that calibration curves are periodically checked and adjusted to correlate to tests performed using ASTM D 1556. With each density calibration check, check the calibration curves furnished with the moisture gages according to ASTM D 3017.
 - b. When field in-place density tests are performed using nuclear methods, make calibration checks of both density and moisture gages at beginning of work, on each different type of material encountered, and at intervals as directed by the Engineer.
 2. Paved and Building Slab Areas: At subgrade and at each compacted fill and backfill layer, perform at least one field in-place density test for every 10,000 sq. ft. or less of paved area or building slab, or no further than 200 feet apart.
 3. Trench Backfill: In each compacted initial and final backfill layer, perform at least one field in-place density test for each 150 feet or less of trench, but no fewer than two tests.
- B. When testing agency reports that subgrades, fills, or backfills are below specified density, scarify and moisten or aerate, or remove and replace soil to the depth required, recompact and retest until required density is obtained.

3.18 PROTECTION

- A. Protecting Graded Areas: Protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris.
- B. Repair and re-establish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or lose compaction due to subsequent construction operations or weather conditions.
1. Scarify or remove and replace material to depth directed by the Engineer; reshape, and recompact at optimum moisture content to the required density.
- C. Settling: Where settling occurs during the Project correction period, remove finished surfacing, backfill with additional approved material, compact, and reconstruct surfacing.
1. Restore appearance, quality, and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to the greatest extent possible.

3.19 DISPOSAL OR STOCKPILE OF SURPLUS AND WASTE MATERIALS

- A. Disposal: Remove surplus unsatisfactory soil and waste material, including unsatisfactory soil, trash, and debris, and legally dispose of it off the Owner's property.
- B. Stockpile: Transport surplus satisfactory soil to designated storage areas on the Owner's property. Stockpile or spread soil as directed by Engineer.

END OF SECTION

SECTION 02220
EXCAVATING, BACKFILLING, AND COMPACTING

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Scope of Work: The work included under this Section consists of excavating, backfilling and compacting as required for the construction of the utility system consisting of piping and appurtenances as shown on the Drawings and specified herein.
- B. Definitions:
1. Maximum Density: Maximum weight in pounds per cubic foot of a specific material.
 2. Optimum Moisture: Percentage of water in a specific material at maximum density.
 3. Rock Excavation: Excavation of any hard natural substance which requires the use of explosives and/or special impact tools such as jack hammers, sledges, chisels or similar devices specifically designed for use in cutting or breaking rock, but exclusive of trench excavating machinery.
 4. Suitable: Suitable materials for fills shall be noncohesive, nonplastic granular local sand and shall be free from vegetation, organic material, marl, silt or muck. The Contractor shall furnish all additional fill material required.
 5. Unsuitable: Unsuitable materials are highly organic soil (Peat or muck) classified as A-8 in accordance with AASHTO Designation M 145.
- C. Plan For Earthwork: The Contractor shall be responsible for having determined to his satisfaction, prior to the submission of his bid, the conformation of the ground, the character and quality of the substrata, the types and quantities of materials to be encountered, the nature of the groundwater conditions, the prosecution of the work, the general and local conditions and all other matters which can in any way affect the work under this Contract. Prior to commencing the excavation, the Contractor shall submit a plan of his proposed operations to the RPR for review. The Contractor shall consider, and his plan for excavation shall reflect, the equipment and methods to be employed in the excavation. The prices established in the Proposal for the work to be done will reflect all costs pertaining to the work.

1.02 QUALITY ASSURANCE

- A. A testing laboratory employed by the Owner will make such tests as are deemed advisable. The Contractor shall schedule his work so as to permit a reasonable time for testing before placing succeeding lifts and shall keep the laboratory informed of his progress. Costs for all testing shall be paid by the Owner. However, any and all tests which have to be repeated because of the failure of the

tested material to meet specification shall be paid for by the Contractor and the cost of any tests shall be deducted from payments due the Contractor.

B. Standards:

1. OSHA 29 CFR Subpart P - Excavations and Trenches a) 1926.650, 1926.651, 1926.652.
2. OSHA 29 CFR Subpart J - a) 1910.146 for Confined Space Entry.

1.03 JOB CONDITIONS

- A. Test borings and the sub-surface exploration data if previously done on the site will be made available upon request and are for the Contractor's information only.
- B. If, in the opinion of the Owner, conditions encountered during construction warrant a change in the footing elevation, or in the depth of removal of unsuitable material from that indicated on the Drawings, an adjustment will be made in the contract price, as provided in the Schedule of cost for Changes in Quantities.

1.04 PROTECTION

A. Sheeting and Bracing:

1. Furnish, put in place, and maintain such sheeting and bracing as may be required to support the sides of excavations, to prevent any movement which could in any way diminish the width of the excavation below that necessary for proper construction, and to protect adjacent structures, power poles, etc. from undermining, and to protect workers from hazardous conditions or other damage. Such support shall consist of braced steel sheet piling, braced wood lagging and soldier beams or other accepted methods. If the Owner is of the opinion that at any points sufficient or proper supports have not been provided, he may order additional supports put in at the expense of the Contractor, and compliance with such order shall not relieve or release the Contractor from his responsibility for the sufficiency of such supports. Care shall be taken to prevent voids outside of the sheeting, but if voids are formed, they shall be immediately filled and compacted. Where soil cannot be properly compacted to fill a void, lean concrete shall be used as backfill at no additional expense to the Owner.
2. The Contractor shall construct the sheeting outside the neat lines of the foundation unless indicated otherwise to the extent he deems it desirable for his method of operation. Sheeting shall be plumb and securely braced and tied in position. Sheeting and bracing shall be adequate to withstand all pressure to which the structure or trench will be subjected. Any movement or bulging which may occur shall be corrected by the Contractor at his own expense so as to provide the necessary clearances and dimensions.
3. Where sheeting and bracing is required to support the sides of excavations for structures, the Contractor shall engage a Professional Geotechnical Engineer, registered in the State of Florida, to design the sheeting and

bracing. The sheeting and bracing installed shall be in conformity with the design, and the Professional Engineer shall provide certification of this.

4. The installation of sheeting, particularly by driving or vibrating, may cause distress to existing structures. The Contractor shall evaluate the potential for such distress and, if necessary, take all precautions to prevent distress of existing structures because of sheeting installation.
 5. The Contractor shall leave in place to be embedded in the backfill all sheeting and bracing not shown on the Drawings but which the Owner may direct him in writing to leave in place at any time during the progress of the work for the purpose of preventing injury to structures, utilities, or property, whether public or private. The Owner may direct that timber used for sheeting and bracing be cut off at any specified elevation.
 6. All sheeting and bracing not left in place shall be carefully removed in such a manner as not to endanger the construction or other structures, utilities, or property. All voids left or caused by withdrawal of sheeting shall be immediately refilled with sand by ramming with tools especially adapted to that purpose, or otherwise as may be directed by the Owner.
 7. The right of the Owner to order sheeting and bracing left in place shall not be construed as creating any obligation on his part to issue such orders, and his failure to exercise his right to do so shall not 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 sheeting and bracing to prevent any caving or moving of the ground.
 8. No wood sheeting is to be withdrawn if driven below mid-diameter of any pipe, and under no circumstances shall any wood sheeting be cut off at a level lower than 1 foot above the top of any pipe.
- B. Pumping and Drainage:
1. The Contractor shall at all times during construction provide and maintain proper equipment and facilities to remove all water entering excavations, and shall keep such excavations dry so as to obtain a satisfactory undisturbed subgrade foundation condition until the fills, structures 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 levels as stipulated in Section 02140 - Dewatering. The Contractor shall engage a Professional Geotechnical Engineer registered in the State of Florida, to design the dewatering systems for all structures. The Contractor shall submit to the Engineer for review a plan for dewatering systems prior to commencing work. The dewatering system installed shall be in conformity with the overall construction plan, and the Professional Engineer shall provide certification of this. The Professional Engineer shall be required to monitor the performance of the dewatering systems during the progress of

the work and require such modifications as may be required to assure that the systems are performing satisfactorily.

2. Dewatering shall at all times be conducted in such a manner as to preserve the undisturbed bearing capacity of the subgrade soils at proposed bottom of excavation and to preserve the integrity of adjacent structures. Well or sump installations shall be constructed with proper sand filters to prevent drawing of finer grained soil from the surrounding ground.
3. Water entering the excavation from surface runoff shall be collected in shallow ditches around the perimeter of the excavation, drained to sumps, and pumped from the excavation to maintain a bottom free from standing water.
4. The Contractor shall take all additional precautions to prevent uplift of any structure during construction.
5. The conveying of water in open ditches or trenches will not be allowed. Permission to use any storm sewers, or drains, for water disposal purposes shall be obtained from the authority having jurisdiction. Any requirements and costs for such use shall be the responsibility of the Contractor. However, the Contractor shall not cause flooding by overloading or blocking up the flow in the drainage facilities, and he shall leave the facilities unrestricted and as clean as originally found. Any damage to facilities shall be repaired or restored as directed by the Owner or the authority having jurisdiction, at no cost to the Owner.
6. The Contractor shall prevent flotation by maintaining a positive and continuous operation of the dewatering system. The Contractor shall be fully responsible and liable for all damages which may result from failure of this system.
7. Removal of dewatering equipment shall be accomplished after the system is no longer required; the Contractor shall remove the material and equipment constituting the system.
8. The Contractor shall take all necessary precautions to preclude the accidental discharge of fuel, oil, etc. in order to prevent adverse effects on groundwater quality.

PART 2 - PRODUCTS

2.01 MATERIALS

A. General:

1. All fill material shall be subject to the review and acceptance of the Engineer.
2. All fill material shall be free of organic material, trash, or other objectionable material. The Contractor shall remove excess or unsuitable material from the job site.

- B. Common Fill Material: Common fill shall be sand and shall not contain stones, rock, concrete or other rubble larger than two (2) inches in diameter. It shall have physical properties that allow it to be easily spread and compacted.
- C. Structural Fill: Structural fill shall be reasonably well graded sand to gravelly sand having the following gradation:

<u>US Sieve Size</u>	<u>Percent Passing By Weight</u>
1 - Inches	100
No. 4	75-100
No. 40	15- 80
No. 100	0- 30
No. 200	0- 12

- D. Class 1 Soils*: Manufactured angular, granular material, 1/4 to 1 1/2 inches (6 to 4 mm) size, including materials having significance such as crushed stone or rock, broken coral, crushed slag, cinders, or crushed shells. Sieve analysis for crushed stone is given below separately.

Crushed Stone: Crushed stone shall consist of clean mineral aggregate free from clay, loam or organic matter, conforming with ASTM C33 stone size No. 89 and with particle size limits as follows:

<u>U.S. Sieve Size</u>	<u>Percent Passing By Weight</u>
1/2	100
3/8	90-100
No. 4	20- 55
No. 8	5- 30
No. 16	0- 10
No. 50	0- 5

- E. Class II Soils**:
 1. GW: Well-graded gravel's and gravel-sand mixtures, little or no fines. Fifty (50) percent or more retained on No. 4 sieve. More than 95 percent retained on No. 200 sieve. Clean.
 2. GP: Poorly graded gravels and gravel-sand mixtures, little or no fines. Fifty (50) percent or more retained on No. 4 sieve. More than 95 percent retained on No. 200 sieve. Clean.
 3. SW: Well-graded sands and gravelly sands, little or no fines. More than fifty (50) percent passes No. 4 sieve. More than 95 percent retained on No. 200 sieve. Clean.
 4. SP: Poorly graded sands and gravelly sands, little or no fines. More than fifty (50) percent passes No. 4 sieve. More than 95 percent retained on No. 200 sieve. Clean.

* Soils defined as Class I materials are not defined in ASTM D2487.

** In accordance with ASTM D2487, less than 5 percent pass No. 200 sieve.

- F. Coarse Sand: Sand shall consist of clean mineral aggregate with particle size limits as follows:

<u>U.S. Sieve Size</u>	<u>Percent Passing By Weight</u>
3/8 inch	100
No. 10	85-100
No. 40	20- 40
No. 200	0- 12

- G. Other Material: All other material, not specifically described, but required for proper completion of the work shall be selected by the Contractor and accepted by the Engineer.

PART 3 - EXECUTION

3.01 PREPARATION

A. Clearing:

1. The construction areas shall be cleared of all obstructions and vegetation including large roots and undergrowth, as required for the excavation.
2. Strip and stockpile topsoil on the site at the location to be determined by the Owner.

3.02 EXCAVATION

- A. General: Excavations for roadways, structures and utilities must be carefully executed in order to avoid interruption of any utility service.

B. Excavating for Roadways/Structures/Utilities:

1. Excavation shall be made to such dimensions as will give suitable room for building the foundations and the structures, for bracing and supporting, for pumping and draining, and for all other work required.
 - a. Excavation for precast or prefabricated structures shall be carried to an elevation 2 feet lower than the proposed outside bottom of the structure to provide space for the select backfill material. Prior to placing the select backfill, the excavation shall be measured by the Owner to indicate to the satisfaction of the Owner that the excavation has been carried to the proper depth and is reasonably uniform over the area to be occupied by the structure.
 - b. Excavation for structures constructed or cast in place in dewatered excavations shall be carried down to the bottom of the structure where dewatering methods are such that a dry excavation bottom is exposed and the naturally occurring material at this elevation leveled and left ready to receive construction. Material disturbed below the founding elevation in dewatered excavations shall be replaced with Class B concrete.

- c. Footings: Cast-in-place concrete footing sides shall be formed immediately after excavation. Forming for footing sides is specified elsewhere.
2. Immediately document the location, elevation, size, material type and function of all new subsurface installations, and utilities encountered during the course of construction.
3. Excavation equipment operators and other concerned parties shall be familiar with subsurface obstructions as shown on the Drawings and should anticipate the encounter of unknown obstructions during the course of the work.
4. Encounters with subsurface obstructions shall be hand excavated.
5. Excavation and dewatering shall be accomplished by methods that preserve the undisturbed state of subgrade soils. Subgrade soils, which become soft, loose, "quick" or otherwise unsatisfactory for support of structures as a result of inadequate dewatering or other construction methods, shall be removed and replaced by crushed stone as required by the Owner at the Contractor's expense.
6. The bottom of excavations shall be rendered firm and dry before placing any structure. Excavated material not suitable for backfill shall be removed from the site and disposed of by the Contractor.
7. All pavements shall be cut prior to removal, with saws or approved power tools.
8. Excavated material shall be stockpiled in such a manner as to prevent nuisance conditions. Surface drainage shall not be hindered.
9. All locations and elevations as required herein must be permanently documented by the Contractor, on the Record Drawings prior to the Owner's review and acceptance of the Application for Payment for that work.
10. Excavation of sewer trenches shall not be opened in advance of the laying of sewer pipe for a greater distance than that required to install the sewer pipe. In no case shall the open trench ahead of the sewer pipe exceed 25 feet. Backfill should be accomplished immediately after jointing the pipe to prevent movements. Shoring, sheeting and bracing of trench is required by Owner when necessary to prevent caving during excavation in unstable material, or to protect adjacent structure, property, workers, and the public. Maintain sheeting in place until the pipe or structure has been placed and backfilled. Shoring and sheeting shall be removed, as the backfilling is done, in a manner that will not damage the pipe or structure or permit voids in the backfill.
11. All excavation, shoring, sheeting and bracing shall conform to the requirements of Federal Register CFR 29 Part 1926-650 and 651 Excavation Standards. Also, Federal Register CFR 29 Part 1926 Construction Standards and Part 1910 General Industry Standards. The most current of these requirements shall apply.

3.03 DRAINAGE

- A. The Contractor shall at all times during construction provide and maintain proper equipment and facilities to remove promptly and dispose of properly all water entering excavations, and keep such excavations dry so as to obtain a satisfactory undisturbed subgrade foundation condition. The dewatering method used shall prevent disturbance of earth below grade.
- B. All water pumped or drained from the work shall be disposed of in a suitable manner without undue interference with other work, without damage to surrounding property, and in accordance with pertinent rules and regulations.
- C. No construction, including pipe laying, shall be allowed in water. No water shall be allowed to contact masonry or concrete within 24 hours after being placed. The Contractor shall constantly guard against damage due to water and take full responsibility for all damage resulting from his failure to do so.
- D. The Contractor will be required at his expense to excavate below grade and refill with crushed stone (gradation 57 or 89) or other accepted fill material if the Engineer determines that adequate dewatering has not been provided.

3.04 UNDERCUT

- A. If the bottom of any excavation is below that shown on the Drawings or specified because of Contractor error, convenience, or unsuitable subgrade due the Contractor's excavation methods, he shall refill to normal grade with fill at his own cost. Fill material and compaction method shall be as directed by the Owner.

3.05 FILL AND COMPACTION

- A. Compact and backfill excavations and construct embankment according to the following schedule. (Proctor standard shall be ASTM D-698):

STRUCTURES AND ROADWORK

<u>Area</u>	<u>Material</u>	<u>Compaction</u>
Beneath Structures	Structural Fill	12" lifts, compacted to 98% maximum density as determined by AASHTO T-180. Fill should not be placed over any in-place soils until those deposits have been compacted to 95% Modified Proctor.
Around Structures	Structural Fill	8" lifts, 95% of maximum density as determined by AASHTO T-180. Use light rubber-tired or vibratory plate compactors.
Beneath Paved Surfaces	Common Fill	12" lifts, 98% by maximum density as determined by AASHTO T-180 or as required by the FDOT Standards.
Open Areas	Common Fill	12" lifts, 95% by maximum density as determined by AASHTO T-180.
Right-Of-Way	Common Fill	12" lifts, 98% by maximum density as determined by AASHTO T-180.

- B. Pipe shall be laid in open trenches unless otherwise indicated on the Drawings or elsewhere in the Contract Documents.
- C. Excavations shall be backfilled to the original grade or as indicated on the Drawings. Deviation from this grade because of settling shall be corrected. Backfill operation shall be performed to comply with all rules and regulation and in such a manner that it does not create a nuisance or safety hazard.
- D. Embankments shall be constructed true to lines, grades and cross sections shown on the plans or ordered by the Owner. Embankments shall be placed in successive layers of not more than 8-inches in thickness, loose measure, for the full width of the embankment. As far as practicable, traffic over the work during the construction phase shall be distributed so as to cover the maximum surface area of each layer.
- E. If the Contractor requests approval to backfill material utilizing lifts and/or methods other than those specified herein, such request shall be in writing to the Owner. Acceptance will be considered only after the Contractor has performed tests, at the Contractor's expense, to identify the material used and density achieved throughout the backfill area utilizing the method of backfill requested. The Owner's acceptance will be in writing.
- A. The backfill material shall be placed in 6 inch layers and compacted, using mechanical compacting equipment to a dry density equal to 98% of the maximum dry density as determined by the standard proctor compaction test ASTM D698, each layer being compacted to the required density prior to placing the next layer. The Utilities Department may require the density be checked by a licensed laboratory at each manhole and at two points between as selected by the inspector, at no cost to the Owner.

END OF SECTION

**SECTION 02260
FINISH GRADING**

PART 1 - GENERAL

1.01 SCOPE OF WORK

- A. Finish grade sub-soil.
- B. Cut out areas to receive stabilizing base course materials for paving and sidewalks.
- C. Place, finish grade and compact top soil.
- D. For areas where subsequent work by others is anticipated, the Contractor shall provide rough grading and shall maintain the area until the subsequent work is performed.

1.02 PROTECTION

- A. Prevent damage to existing fencing, trees, landscaping, natural features, benchmarks, and pavement and utility lines. Correct damage at no cost to the Owner.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Topsoil: Friable loam free from subsoil, roots, grass, excessive amount of weeds, stones, and foreign matter; acidity range (pH) of 5.5 to 7.5; containing a minimum of 4 percent and a maximum of 25 percent organic matter. The topsoil shall be suitable for the proposed plant growth shown on the Drawings and specified. Use topsoil stockpiles on site if conforming to these requirements. If there is not sufficient topsoil available at the project site, the Contractor shall furnish additional topsoil as required to complete the work at no additional cost to the Owner.

PART 3 - EXECUTION

3.01 SUB-SOIL PREPARATION

- A. Rough grade sub-soil systematically to allow for a maximum amount of natural settlement and compaction. Eliminate uneven areas and low spots. Remove debris, roots, branches, stones, etc. Remove sub-soil that has been contaminated with petroleum products.
- B. Cut out areas to sub-grade elevation, which are to receive stabilizing base for paving and sidewalks.
- C. Bring sub-soil to required levels, profiles and contours. Make changes in grade gradual. Blend slopes into level areas.
- D. Slope grade away from building a minimum of 2-inches in 10-feet unless indicated otherwise on the Drawings.

- E. Cultivate sub-grade to a depth of 3-inches, where topsoil is to be placed. Repeat cultivation in areas where equipment, used for hauling and spreading topsoil, has compacted sub-soil.

3.02 PLACING TOPSOIL

- A. Place topsoil in areas where seeding, sodding, and planting is to be performed. Place to the following minimum depths, up to finished grade elevations.
 - 1. 6-inches for seeded areas.
 - 2. 4 1/2-inches for sodded areas.
 - 3. 24-inches for shrub beds.
 - 4. 18-inches for flower beds.
- B. Use topsoils in relatively dry state. Place during dry weather.
- C. Fine grade topsoil eliminating rough and low areas to ensure positive drainage. Maintain levels, profiles and contours of sub-grades.
- D. Remove stones, roots, grass, weeds, debris, and other foreign material while spreading.
- E. Manually spread topsoil around trees, plants, and building, to prevent damage, which may be caused by grading equipment.
- F. Lightly compact placed topsoil.

3.03 SURPLUS MATERIAL

- A. Remove surplus sub-soil and topsoil from site.
- B. Leave stockpile areas and entire job site clean and raked, ready to receive landscaping.

END OF SECTION

**SECTION 02934
SOLID SODDING**

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Scope of Work: The work specified in this section consists of establishing a stand of grass by furnishing and placing grass sod. Included are fertilizing, watering and maintenance as required to assure a healthy stand of grass. Solid sodding shall be placed on all slopes greater than 4:1, within 10 feet of all proposed structures and in all areas where existing grass or sod (regardless of its condition) is removed or disturbed by Contractor's operation unless otherwise specified or shown on the Drawings.

1.02 SUBMITTALS

- A. A certification of sod quality by the producer shall be delivered to the Engineer ten days prior to use.

PART 2 - PRODUCTS

2.01 GRASS SOD

- A. Grass sod for restoration of new construction sites and/or areas disturbed by construction on existing sites shall be St. Augustine or Bahia to match the existing adjacent area and shall be well matted with grass roots. The sod shall be taken up in rectangles, preferably 12-inch by 24-inch, shall be a minimum of 2-inches in thickness and shall be live, fresh and uninjured at the time of planting.
- B. It shall be reasonably free of weeds and other grasses and shall have a soil mat of sufficient thickness adhering firmly to the roots to withstand all necessary handling. The sod shall be planted as soon as possible after being dug and shall be shaded and kept moist until it is planted.

2.02 FERTILIZER

- A. Commercial fertilizers shall comply with the state fertilizer laws.
- B. The numerical designations for fertilizer indicate the minimum percentages (respectively) of (1) total nitrogen, (2) available phosphoric acid and (3) water-soluble potash contained in the fertilizer.
- C. The chemical designation of the fertilizer shall be 6-6-6. At least 50 percent of the nitrogen shall be derived from organic sources. At least 50 percent of the phosphoric acid shall be from normal super phosphate or an equivalent source which will provide a minimum of two units of sulfur. The amount of sulfur shall be indicated on the quantitative analysis card attached to each bag or other container.

PART 3 - EXECUTION

3.01 PREPARATION OF GROUND

- A. The area over which the sod is to be placed shall be scarified or loosened to a depth and then raked smooth and free from debris. Where the soil is sufficiently loose and clean, the Owner, at his discretion, may authorize the elimination of ground preparation.

3.02 APPLICATION OF FERTILIZER

- A. Before applying fertilizer, the soil pH shall be brought to a range of 6.0 - 7.0.
- B. The fertilizer shall be spread uniformly over the area to be sodded at the rate of 700 pounds per acre, or 16 pounds per 1,000 square feet, by a spreading device capable of uniformly distributing the material at the specified rate. Immediately after spreading, the fertilizer shall be mixed with the soil to a depth of approximately 4-inches.
- C. On steep slopes, where the use of a machine for spreading or mixing is not practicable, the fertilizer shall be spread by hand and raked in and thoroughly mixed with the soil to a depth of approximately 2-inches.

3.03 PLACING SOD

- A. The sod shall be placed on the prepared surface, with edges in close contact and shall be firmly and smoothly embedded by light tamping with appropriate tools.
- B. Where sodding is used in drainage ditches, or on slopes of 4:1 or greater, the setting of the pieces shall be staggered so as to avoid a continuous seam along the line of flow. Along the edges of such staggered areas, the offsets of individual strips shall not exceed 6 inches. In order to prevent erosion caused by vertical edges at the outer limits, the outer pieces of sod shall be tamped so as to produce a featheredge effect.
- C. On slopes greater than 2:1, the Contractor shall, if necessary, prevent the sod from sliding by means of wooden pegs driven through the sod blocks into firm earth, at suitable intervals.
- D. Sod which has been cut for more than 72 hours shall not be used unless specifically authorized by the Owner after his inspection thereof. Sod which is not planted within 24 hours after cutting shall be stacked in an approved manner and maintained and properly moistened. Any pieces of sod which, after placing, show an appearance of extreme dryness shall be removed and replaced by fresh, uninjured pieces.
- E. Sodding shall not be performed when weather and soil conditions are, in the Owner's opinion, unsuitable for proper results.

3.04 WATERING

- A. The areas on which the sod is to be placed shall contain sufficient moisture, as determined by the Owner, for optimum results. After being placed, the sod shall be kept in a moist condition to the full depth of the rooting zone for at least 2 weeks. Thereafter, the Contractor shall apply water as needed until the sod roots and starts to grow for a minimum of 60 days (or until final acceptance, whichever is latest).

3.05 MAINTENANCE

- A. The Contractor shall, at his expense, maintain the sodded areas in a satisfactory condition until final acceptance of the project. Such maintenance shall include watering, mowing and repairing of any damaged areas and replacing areas in which the establishment of the grass stand does not appear to be developing satisfactorily.
- B. Replanting or repair necessary due to the Contractor's negligence, carelessness or failure to provide routine maintenance shall be at the Contractor's expense.

END OF SECTION

**SECTION 03130
CONCRETE REHABILITATION**

PART 1 - GENERAL

1.01 SUMMARY

- A. This section includes the following:
1. Removal of deteriorated concrete and reinforcement and subsequent replacement and patching.
 2. Floor Repair.
 3. Epoxy void injection.
 4. Corrosion-inhibiting treatment.
 5. Polymer crack sealers.

1.02 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Concrete Repairs: Contractor shall submit a project specific repair plan for review and approval by the City and Engineer prior to starting any work.
- C. Qualification Data: For installers.
1. For products required to be installed by workers approved by product manufacturers, include letters of acceptance by product manufacturers certifying that installers are approved to apply their products.
- D. Material Certificates: For each type of product indicated, signed by manufacturers.

1.03 QUALITY ASSURANCE

- A. Installer Qualifications: Installer that employs workers trained and approved by manufacturer to apply all products specified.
- B. Manufacturer Qualifications: Manufacturer that employs factory-trained representatives who are available for consultation and Project-site inspection.

PART 2 - PRODUCTS

2.01 BONDING AGENTS

- A. Epoxy Bonding Agent: ASTM C 881/C 881M, Type II.
1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:
 2. Products: Subject to compliance with requirements, provide one of the following:
 - a. BASF Master Emaco ADH 326

- b. Approved Equal
- 3. Thin Film Open Time: Not less than two hours.

2.02 PATCHING MORTAR

A. Patching Mortar, General:

- 1. Unless otherwise indicated, use any of the products specified in this Article.
- 2. Overhead Patching Mortar: For overhead repairs, use patching mortar recommended by manufacturer for overhead use and as specified in this Article.

B. Cementitious Patching Mortar: Packaged, dry mix complying with ASTM C 928.

- 1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:
- 2. Products: Subject to compliance with requirements, provide one of the following:
 - a. Cementitious Patching Mortar, Rapid Setting:
 - i. BASF Master Emaco N 424.
 - ii. Approved Equal.

2.03 MISCELLANEOUS MATERIALS

A. Epoxy Joint filler: 2-component, semirigid, 100 percent solids, epoxy resin.

- 1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:
- 2. Products: Subject to compliance with requirements, provide one of the following:
 - a. Sika Corporation; Sikadur Crack Fix
 - b. Approved Equal.

B. Epoxy Crack Injection Adhesive: ASTM C 881/C 881M, Type I, II and IV:

- 1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:
- 2. Products: Subject to compliance with requirements, provide one of the following:
 - a. BASF Master Flow 647
 - b. Approved Equal.

C. Corrosion-Inhibiting Treatment Materials: One-component, zinc-rich epoxy primer that forms a protective film on steel reinforcement.

- 1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:
- 2. Products: Subject to compliance with requirements, provide one of the following:

- a. BASF Master Project P 8100 AP
- b. Approved Equal.

2.04 MIXES

- A. Add products, in clean containers, according to manufacturer's written instructions.
 - 1. Add clean silica sand and coarse aggregates to products only as recommended by manufacturer.
 - 2. Do not add water, thinners, or additives unless recommended by manufacturer.
 - 3. When practical, use manufacturer's premeasured packages to ensure that materials are mixed in proper proportions. When premeasured packages are not used, measure ingredients using graduated measuring containers; do not estimate quantities or use shovel or trowel as unit of measure.
 - 4. Do not mix more materials than can be used within recommended open time. Discard materials that have begun to set.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Notify Engineer seven days in advance of dates when areas of deteriorated or delaminated concrete and deteriorated reinforcing bars will be located.
- B. Locate areas of deteriorated or delaminated concrete visually or by using hammer or chain drag sounding and mark boundaries. Mark areas for removal by simplifying and squaring off boundaries.

3.02 PREPARATION

- A. Protect people, motor vehicles, equipment, surrounding construction, Project site, plants, and surrounding buildings from injury resulting from concrete rehabilitation work.
 - 1. Neutralize and collect alkaline and acid wastes according to requirements of authorities having jurisdiction, and dispose of by legal means off Owner's property.
 - 2. Dispose of runoff from wet operations by legal means and in a manner that prevents soil erosion, undermining of paving and foundations, damage to landscaping, and water penetration into building interiors.
- B. Concrete Removal:
 - 1. Saw-cut perimeter of areas indicated for removal to a depth of at least ¼ inch (6 mm). Make cuts perpendicular to concrete surfaces and no deeper than cover on reinforcement.
 - 2. Remove deteriorated and delaminated concrete by breaking up and dislodging from reinforcement.

3. Remove additional concrete, if necessary, to provide a depth of removal of at least ¼ inch (6 mm) over entire removal area.
 4. Where half or more of the perimeter of reinforcing bar is exposed, bond between reinforcing bar and surrounding concrete is broken, or reinforcing bar is corroded, remove concrete from entire perimeter of bar and to provide at least a ¾-inch (19-mm) clearance around bar.
 5. Test areas where concrete has been removed by tapping with hammer, and remove additional concrete until unsound and disbonded concrete is completely remove.
 6. Provide fractured aggregate surfaces with a profile of at least 1/8 inch (3 mm) that are approximately perpendicular or parallel to original concrete surfaces. At columns and walls, make top and bottom surfaces level, unless otherwise directed.
 7. Thoroughly clean removal areas of loose concrete, dust, and debris.
- C. Reinforcing Bar Preparation: Remove loose and flaking rust from reinforcing bars by wire brushing until only tightly bonded light rust remains.
- D. Preparation of cracks for Repair: Rout cracks full width to edges and depth of spalls, but not less than ¼ (6 mm) deep. Clean out debris and loose concrete; vacuum or blow clear with compressed air.
- E. Surface Preparation for Corrosion-Inhibiting Treatment: Clean concrete by low-pressure water cleaning, detergent scrubbing, or sand blasting to remove dirt, oils, films, and other materials detrimental to treatment application. Allow surface to dry before applying corrosion-inhibiting treatment.
- F. Surface Preparation for Patching: Clean concrete by low-pressure water cleaning or detergent scrubbing to remove dirt, oils, films, and other materials detrimental to repair product application. Apply bonding agent in accordance with manufacturer's instructions prior to patching.

3.03 APPLICATION

- A. General: Comply with manufacturer's written instructions and recommendations for application of products, including surface preparation.
- B. Anticorrosion Agent: Apply to reinforcing bars according to manufacturer's written instructions. Apply to reinforcing bars in two coats, allowing first coat to dry two to three hours before applying second coat. Allow to dry before placing patching mortar or concrete.
- C. Epoxy Bonding Agent: Apply to concrete by brush, roller, or spray according to manufacturer's written instructions, leaving no pinholes or other uncoated areas. Apply patching mortar or concrete while epoxy is still tacky. If epoxy dries, recoat before placing patching mortar or concrete.
- D. Patching Mortar: Unless otherwise recommended by manufacturer, apply as follows:

1. Dampen substrate thoroughly and then remove standing water. Scrub a slurry of neat patching mortar into substrate, filling pores and voids.
 2. Place patching mortar by troweling toward edges of patch to force intimate contact with edge surfaces. For large patches, fill edges first and then work toward center, always troweling toward edges of patch. At fully exposed reinforcing bars, force patching mortar to fill space behind bars by compacting with trowel from sides of bars.
 3. Place material in lifts of not more than 1 inch (25 mm) nor less than 1/4 inch (6 mm). Do not feather edge.
 4. For overhead patching, place material in lifts of not more than 1 inch (25 mm) nor less than 1/4 inch (6 mm). Do not feather edge.
 5. After each lift is placed, consolidate material and screed surface.
 6. Where multiple lifts are used, score surface of lifts to provide a rough surface for application of subsequent lifts. Allow each lift to reach final set before placing subsequent lifts.
 7. Allow surfaces of lifts that are to remain exposed to become firm and then finish to a smooth surface.
 8. Cure cementitious patching materials, including polymer-modified, cementitious patching materials, for not less than seven days by applying curing compound compliant with ASTM C 90 or C 1315.
- E. Epoxy Injection: Comply with manufacturer's written instructions and the following:
1. Place injection ports as recommended by epoxy manufacturer, spacing no farther apart than thickness of member being injected. Seal injection ports in place with capping adhesive.
 2. After epoxy adhesive has set, remove injection ports and grind surfaces smooth.
- F. Corrosion-Inhibiting Treatment: Apply by brush, roller, or airless spray in two coats at manufacturer's recommended application rate. Remove film of excess treatment by high-pressure washing before patching treated concrete.

END OF SECTION

**SECTION 03300
CAST-IN-PLACE CONCRETE**

PART 1 - GENERAL

1.01 SECTION REQUIREMENTS

- A. Submittals: Concrete mix designs.
- B. Comply with ASTM C 94; ACI301, “Specification for Structural Concrete”; ACI 117, “Specifications for Tolerances for Concrete Construction and Materials”; and CRSI’s Manual of Standard Practice.”
- C. Engage a Qualified independent testing agency to design concrete mixes.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Deformed Reinforcing Bars: ASTM A 615/A 615M, Grade 60 (Grade 420).
- B. Portland Cement: ASTM C 150, Type I or II.
- C. Fly Ash: ASTM C 618, Type C or F.
- D. Aggregates: ASTM C 33, uniformly graded.
- E. Air-Entraining Admixture: ASTM C 260.
- F. Chemical Admixtures: ASTM C 494 water reducing.
- G. Liquid Membrane-Forming Curing Compound: ASTM C 309, clear.

2.02 MIXES

- A. Proportion normal-weight concrete mixes to provide the following properties:
 - 1. Compressive Strength: 4000 psi (27.6 MPa) at 28 days.
 - 2. Slump Limit: 4 inches (100 mm).
 - 3. Air Content: 5.5 7.0 percent for concrete exposed to freezing and thawing, 2 to 4 percent elsewhere.

PART 3 - EXECUTION

3.01 CONCRETING

- A. Construct formwork and maintain tolerances and surface irregularities within ACI 117 limits of Class A for concrete exposed to view and Class C for other concrete surfaces.
- B. Accurately position, support, and secure reinforcement.
- C. Install construction, isolation, and contraction joints where indicated. Install full-depth joint-filler strips at isolation joints.
- D. Place concrete in a continuous operation and consolidate using mechanical vibrating equipment.

- E. Protect concrete from physical damage, premature drying, and reduced strength due to hot or cold weather during mixing, placing, and curing.
- F. Formed Surface Finish: Smooth-formed finish for concrete exposed to view, coated, or covered by waterproofing or other direct-applied material; rough-formed finish elsewhere.
- G. Slab Finishes: Nonslip-broom finish to exterior concrete platforms, steps, and ramps.
- H. Cure formed surfaces by moist curing for at least seven days.
- I. Begin curing concrete slabs after finishing. Apply membrane-forming curing compound to concrete.
- J. Owner will engage a testing agency to perform field tests and to submit test reports.
- K. Protect concrete from damage. Repair surface defects in formed concrete and slabs.
- L. Repair slabs not meeting surface tolerances by grinding high areas and by applying a repair underlayment to low areas receiving floor coverings and a repair topping to low areas to remain exposed.

END OF SECTION

**SECTION 05520
HANDRAILS AND RAILINGS**

PART 1 - GENERAL

1.01 SECTION REQUIREMENTS

- A. Structural Performance: Design, engineer, fabricate, and install handrails and railings to withstand structural loads required by ASCE 7, and 2020 Florida Building Code.
- B. Submittals: Shop Drawings and structural calculations signed and sealed by a qualified professional engineer registered in the state Florida.

PART 2 - PRODUCTS

2.01 METALS

- A. Aluminum, Extruded Bar and Tube: ASTM B 221 (ASTM B 221M), alloy 6063-T5/T52.
- B. Aluminum Castings: ASTM B 26 (ASTM B 26M), alloy A356-T6.
- C. Steel Plates, Shapes, and Bars: ASTM A 36/A 36M.
- D. Steel Pipe: ASTM A 53, Schedule 40.
- E. Steel Tube: ASTM A 500.
- F. Brackets, Flanges, and Anchor Fittings: Cast or formed metal of same type of material and finish as supported rails, unless otherwise indicated.

2.02 OTHER MATERIALS

- A. Nonshrink, Nonmetallic Grout: ASTM C 1107; recommended by manufacturer for exterior applications.

2.03 FABRICATION

- A. Assemble railing systems in shop to the greatest extent possible. Use connections that maintain structural value of joined pieces.
- B. Form changes in direction of railing members by bending or by mitering at elbow bends.
- C. Fabricate railing systems and handrails for connecting members by welding or with concealed mechanical fasteners and fittings.
- D. Provide manufacturer's standard wall brackets, flanges, miscellaneous fittings, and anchors to connect handrail and railing members to other construction.
- E. Provide wall returns at ends of wall-mounted handrails.

2.04 FINISHES

- A. Class I, clear anodic finish; AA-M12C22A41; complying with AAMA 607.1, clear anodic finish.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Fit exposed connections accurately together to form tight, hairline joints.
- B. Set handrails and railings accurately in location, alignment, and elevation and free from rack.
- C. Coat concealed surfaces of aluminum that will be in contact with cementitious materials or dissimilar metals, with a heavy coat of bituminous paint.
- D. Anchor posts as shown on drawings.
- E. Attach handrails to wall with wall brackets.
- F. Paint as directed by Owner

END OF SECTION

**SECTION 09905
PIPING, VALVE, AND EQUIPMENT IDENTIFICATION SYSTEM**

PART 1 - GENERAL

1.01 DESCRIPTION

1.02 SCOPE OF WORK:

- A. The work included under this Section consists of providing an identification system for piping systems and related equipment.

1.03 RELATED WORK

- A. Division 1 – General Requirements
- B. Section 09920 – Tank Finishes Rehabilitations
- C. Section 15062 – Ductile Iron Pipe and Fittings
- D. Section 15100 – Valves and Piping Appurtenances

1.04 REFERENCES

- A. American Water Works Association (AWWA)
- B. American National Standards Institute (ANSI) Standards

1.05 GENERAL DESIGN

- A. Piping color codes, and code labels for pipe identification shall conform to Table 09905.
- B. Pipelines, equipment, or other items which are not listed here shall be assigned a color by the Owner and shall be treated as an integral part of the Contract.
- C. Color coding shall consist of color code painting and identification of all exposed conduits, through lines and pipelines for the transport of gases, liquids, or semi-liquids including all accessories such as valves, insulated pipe coverings, fittings, junction boxes, bus bars, connectors and any operating accessories which are integral to a whole functional mechanical pipe and electrical conduit systems.
- D. All moving parts, drive assemblies, and covers for moving parts which are potential hazards shall be Safety Orange.

- E. All safety equipment shall be painted in accordance with OSHA standards.
- F. All inline equipment and appurtenances not assigned another color shall be painted the same base color as the piping. The pipe system shall be painted with the pipe color up to, but not including, the flanges attached to pumps and mechanical equipment assigned another color.
- G. All hangers and pipe support floor and accessories stands shall be painted to match their piping. The system shall be painted up to, but not including, the face of flanges or the flexible conduit connected to electrical equipment. Structural members used solely for pipe hangars or supports shall be painted to match their piping. Where the contact of dissimilar metals may cause electrolysis and where aluminum will contact concrete, mortar or plaster, the contact surface of the metals shall be coated in accordance with Section 09920 – Tank Finishes Rehabilitation.
- H. All systems which are an integral part of the equipment, that is originating from the equipment and returning to the same piece of equipment, shall be painted between and up to, but not including, the face of flanges or connections on the equipment.

1.06 QUALITY ASSURANCE

- A. All work shall be in accordance with ANSI A13.1, Scheme for the Identification of Piping Systems.

1.07 SUBMITTALS

- A. Submit manufacturer's descriptive literature, illustrations, specifications, and other pertinent data.
- B. Schedules:
 - 1. Provide a typewritten list of all tagged valves giving tag color, shape, letter code and number, the valve size, type, use, and general location.
 - 2. Provide a complete list of materials to be furnished and surfaces on which they will be used.
- C. Samples:
 - 1. Provide a sample of each type valve tag supplied.
 - 2. Provide a sample of each type of identification tape supplied.
 - 3. Provide manufacturer's color charts for color selection by Engineer.

1.08 DELIVERY, STORAGE, AND HANDING

- A. Except for locally mixed custom colors, deliver sealed containers with labels legible and intact.

- B. Materials shall be stored as follows:
1. Store in accordance with the manufacturer's recommendations.
 2. Store only acceptable project materials on project site.
 3. Store in suitable location.
 4. Restrict storage to paint materials and related equipment.
 5. Comply with health and fire regulations.

PART 2 - PRODUCTS

2.01 MATERIALS AND EQUIPMENT

- A. Materials for painting shall conform to requirements of Section 09920 – Tank, Finishes, Rehabilitation. Materials selected for coating systems for each type of surface shall be the product of a single manufacturer.
- B. Above Ground Piping: Above ground piping shall be identified by self-adhesive pipe markers equal to those manufactured by W. H. Brady Company or equal.
1. Markers shall be of wording and color as shown in Table 09905.
 2. Lettering and flow direction arrows shall be in conformance with ANSI A13.1:
 - a. 1/2-inch high for pipes 1 1/4 inches or smaller in diameter.
 - b. 3/4-inch high for pipes 1 1/2 inches to 2 inches in diameter.
 - c. 1 1/4-inches high for pipes 2 1/2 inches to 6 inches in diameter.
 - d. 2 1/2-inches high for pipes 8 inches to 10 inches in diameter.
 - e. 3 1/2-inches high for pipes 10 inches diameter or larger.
- C. Buried Piping: Buried piping shall be identified by a continuous length of identification tape around the pipelines.
1. Ductile Iron Pipe: Pipelines shall be spiral wrapped with a continuous length of minimum 2-inch wide vinyl identification tape. The tape shall be wrapped a minimum of three times per pipe section with a maximum spacing of 6-inches.
- D. Above Ground and Exposed Valves: A coded and numbered tag attached with brass chain and/or brass "S" hooks shall be provided on all exposed valves.
1. Tags for valves on pipe shall be brass or anodized aluminum. Colors for aluminum tags shall, where possible, match the color code of the pipe line on which installed. Square tags shall be used to indicate normally closed valves and round tags shall indicate normally open valves.
 2. Coding: In addition to the color coding, each tag shall be stamped or engraved with wording or abbreviations to indicate the valve service and number. All color and letter coding shall be approved by the Engineer. Valve service shall

either be as listed in Table 09905, or by equipment abbreviation if associated with a particular piece of equipment. Valve numbering, if required, shall be as approved by the Engineer and/or Owner.

- E. Buried Valves: Buried valves shall have valve boxes protected by a concrete pad. The concrete pad for the valve box cover shall have a 3-inch diameter, bronze disc embedded in the surface as shown on the Drawings. The bronze disc shall have the following information neatly stamped on it:
 - 1. Size of valve, inches
 - 2. Type of valve:
 - a. BFV - Butterfly Valve
 - b. PV - Plug Valve
 - 3. Number of turns to fully open
 - 4. Direction to open

PART 3 - EXECUTION

3.01 PREPARATION

- A. Unless otherwise indicated or specifically approved, all fabricated equipment shall be shop primed and finished. See Section 09920 for additional details.
- B. The Contractor shall be responsible for and take whatever steps are necessary to properly protect the shop prime and finish coats against damage from weather or any other cause.
- C. Where specified in other sections of these specifications for mechanical equipment, the Contractor shall apply field coat or coats of paint in accordance with Section 09920. If shop finish coat is unsatisfactory due to poor adhesion or other problems with primer or finish coats, coatings shall be removed and replaced by sandblasting, priming and finishing in accordance with Section 09920 and this Section.
- D. Wherever fabricated equipment is required to be sandblasted, the Contractor shall protect all motors, drives, bearings, gears, etc., from the entry of grit. Any equipment found to contain grit shall be promptly and thoroughly cleaned. Equipment contaminated by grit in critical areas, such as bearings, gears, seals, etc., shall be replaced at no cost to the Owner.

3.02 INSTALLATION

- A. Identification tape shall be installed for all buried pipelines in accordance with the manufacturer's installation instructions, as shown on the Drawings, and as specified herein.

- B. Markers shall be placed no more than 20 feet apart with at least one marker on every straight run and additional markers at turns and where pipe passes through walls.
- C. An arrow indicating direction of flow shall be placed adjacent to each marker.
- D. The bronze valve identification disc for buried valves shall be embedded in the concrete pad surrounding the valve box.

**TABLE 09905
COLOR CODES AND ABBREVIATIONS**

Service	Mark	Conduit, Pipe, and Valve Color Code	Letter and Flow Arrow Color
Drain	DR	Brown	White
Potable Water	PW	Blue	Black
Electrical Conduit	--	Interior: Match adjacent wall or equipment color Exterior: Grey	--

NOTE: Other piping shall be painted as directed by the Engineer.

END OF SECTION

SECTION 09920
TANKS FINISHES REHABILITATION

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. Furnish all labor, materials, and equipment necessary to perform the coating rehabilitation of the exterior concrete spot repairs, interior concrete and metal piping and appurtenances of the NW Pumping Station ground storage tank and the exterior and interior coatings of the East ground storage tank located at the Morris Bridge Pump Station as described in the Drawings, Notes and these specifications.
- B. The work involves surface preparation of concrete, ductile iron pipes and fittings, carbon steel, cast steel and non-ferrous metals including aluminum and galvanized steel surfaces as indicated on the tank drawings and painting notes.
- C. Surface preparation and coating application will not be performed until concrete repairs are performed.
- D. Prepare concrete surfaces by high pressure water cleaning (HPWC) abrasive blast cleaning and power tools as needed to prepare for coating application
- E. Interior metal surfaces to be painted shall have existing coatings, scale and corrosion products fully removed and coated as required herein using products suitable for contact with potable water.
- F. Exterior metal surfaces to be coated shall be prepared on a spot and area basis to remove cracked, peeling, delaminating and blistered coating. Surfaces to be painted will be spot coated with a primer and receive a spot application of finish coat.
- G. Perform or obtain an asbestos survey prior to mobilizing. Perform lead based paint survey immediately after draining the tank.

1.02 REFERENCES

- A. American Society for Testing and Materials (ATM)
 - 1. ASTM E337, Standard Test Method for Measuring Humidity with a Psychrometer
 - 2. ASTM F1869, “Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride”.
 - 3. ASTM D4138, Standard Test Method for Measurement of Dry Paint Thickness of Protective Coating Systems by Destructive Means
 - 4. ASTM D4258, “Standard Practice for Surface Cleaning Concrete for Coating”.
 - 5. ASTM D4259, “Standard Practice for Abrading Concrete”.
 - 6. ASTM D4263, “Standard Test Method for indicating Moisture in Concrete by the Plastic Sheet Method”.

7. ASTM D4285, Standard Test Method for Indicating Oil or Water in Compressed Air
 8. ASTM D4414, Standard Practice for Measurement of Wet Film Thickness by Notch Gages
 9. ASTM D 4417 Standard Test Methods for Field Measurement of Surface Profile of Blast Cleaned Steel
 10. ASTM D5402, Standard Test Methods for assessing the Solvent Resistance of Organic Coatings Using Solvent Rubs
 11. ASTM F1869 Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride
- B. American Water Works Association (AWWA)
1. AWWA D102 - Standard for Painting Steel Water Storage Tanks
 2. ANSI AWWA D110-04 Wire-Strand-Wound Circular Pre-Stressed Concrete Water Tanks
- C. International Concrete Repair Institute (ICRI)
1. Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings, and Polymer Overlays- Guideline No. 03732
- D. National Association of Pipe Fabricators, Inc. (NAPF)
1. NAPF 500-03- Surface Preparation Standard for Ductile Iron Pipe and Fittings in Exposed Locations Receiving Special External Coatings and/or Special Internal Linings.
 - a. NAPF 500-03-01 Surface Preparations Standard for "Solvent Cleaning"
 - b. NAPF 500-03-03 Power Tool Cleaning
 - c. NAPF 500-03-05 Surface Preparations Standard for "Abrasive Blast Cleaning of Cast Ductile Iron Fittings"
- E. SSPC: The Society for Protective Coatings
1. SSPC- PA-1 - Paint Application Specification No. 1: Shop, Field, and Maintenance Painting of Steel
 2. SSPC-PA-2 - Procedure for Determining Conformance to Dry Coating Thickness Requirements.
 3. SSPC - PA-3 - Paint Application Guide for Safety in Paint Application.
 4. SSPC Technology Guide No. 6
 5. SSPC-SP 6/NACE No. 3 - Joint Surface Preparation Standard SSPC- SP 6/NACE No. 3: Commercial Blast Cleaning
 6. SSPC-SP 10/NACE No. 2 - Joint Surface Preparation Standard SSPC- SP 10/NACE No. 2: Near-White Blast Cleaning
 7. SSPC-SP 15 - Surface Preparation Specification No. 15: Commercial Grade Power Tool Cleaning to Bare Metal

8. SSPC-SP WJ-4/NACE WJ-4 -Waterjet Cleaning of Metals—Light Cleaning
 9. SSPC-SP 13/NACE No. 6 - Surface Preparation of Concrete
 10. SSPC -VIS-1 - Guide and Reference Photographs for Steel Surfaces Prepared by Dry Abrasive Blasting.
 11. SSPC-VIS 3 - Guide and Reference Photographs for Steel Surfaces Prepared by Power and Hand Tool Cleaning. /
- F. NACE International; (National Association of Corrosion Engineers International)
1. NACE SP -0188 - “Holiday” Detection Standard.
- G. NSF International (National Sanitation Foundation International) (NSF)
1. NSF/ANSI 61 Coatings and Linings
 2. NSF/ANSI/CAN 61
- H. National Lead Laboratory Accreditation Program (NLLAP)
- I. National Emissions Standards for Hazardous Air Pollutants (NESHAP)
- J. Where reference is made to one of the above or other referenced standards, the revisions in effect at the time of bid opening shall apply.

1.03 QUALITY ASSURANCE

- A. Contractor shall have at least ten years’ experience in the field of water tanks cleaning and tanks painting, being of comparable type and scale. Coating material shall have been used on similar projects successfully for a minimum of five years, being of comparable type and scale.
- B. Only one coating manufacturer shall supply the coating materials. No intermixing of products between manufacturers shall be permitted.
- C. The coating materials shall be applied in strict accordance with the coating manufacturer's written recommendations unless more stringent requirements are specified.
- D. Throughout the duration of the work, the Contractor shall provide the Owner (or Owner’s Representative) with safe and reasonable access to conduct its own Quality Assurance and hold point inspections of the work performed by the Contractor.
- E. Contractor shall provide for the Engineer all necessary rigging and safety gear required to complete the inspection and testing operations. The Contractor shall assist the Engineer in making all required quality assurance tests and inspections. Each step of the construction is subject to approval by the Engineer prior to proceeding with a subsequent step.
- F. The Contractor shall afford representatives of the Local, State, and Federal agencies having authority, every reasonable, safe, and proper access for observation of the work done or being done at the site at all times.
- G. No coating work shall be done if the ambient temperatures (air, coating material and substrate) are not within the ranges allowed by the coating manufacturer. The

Contractor shall control the interior conditions through use of effective dehumidification and ventilation equipment.

- H. The Contractor shall provide a Quality Control Inspector that has taken and successfully completed a Coating Inspector Training Class and has a minimum of two-year's experience in performing and reporting on quality control inspections.
- I. The Contractor shall erect and maintain containment systems surrounding the work to contain emissions of dust, debris, and overspray. Working platforms and containments, cables, and other supporting structures shall be designed to support the workers, Owner's Representatives, spent surface preparation media, and equipment according to OSHA regulations. If containment is to be attached to the structure, bolting shall attach the containment, clamping, or similar means.
- J. Welding or drilling into the structure is prohibited.
- K. The Contractor shall provide drawings showing the containment system and indicate the method(s) of supporting the working platform and containment materials.
- L. If erecting a structural containment, the Contractor shall submit calculations and drawings, signed and sealed by a structural engineer licensed in the state of Florida, that assure the structural integrity of the containment structure.
- M. Engineer review and acceptance of the drawings and calculations shall not relieve the Contractor from the responsibility for the safety of the working platforms and containment, and for providing ample ventilation to control worker and environmental exposures. After the work platforms and containment materials are erected additional measures may be needed to ensure worker safety according to OSHA regulations. The Contractor shall apply such measures at no additional cost to the Owner.

1.04 QUALITY CONTROL AND INSPECTION OF WORK

- A. The Contractor is responsible for conducting Quality Control Inspections for all phases of the work.
- B. Prepare a Quality Control Plan including all inspection tasks to be performed, inspection equipment and test methods to be employed, acceptance criteria and inspection report forms for approval by the Owner. Include the qualifications, certifications and experience of the Quality Control Inspector(s)
- C. All tests, measurements and inspections shall be documented daily. Provide signed inspection reports to the Engineer on a weekly basis, or more frequently if requested.
- D. It is the Contractor's responsibility to maintain an updated progress schedule and coordinate with the Owner/ Engineer when an area is ready for hold point inspections. No work further work in that area will be allowed until the Owner and Engineer have approved the work performed.
- E. Deficient areas such as pinholes, holidays, embedded contamination, sags, mechanical damage, high / low mils, shall be repaired to meet the requirements of this specification.
- F. The Owner can stop the job if the Contractor is deviating from the specifications.

- G. The Contractor shall afford representatives of the Local, State, and Federal agencies having authority, every reasonable, safe, and proper access for observation of the work done or being done at the site at all times.

1.05 EXISTING COATING AND STRUCTURE SURVEY

- A. The contractor shall perform or obtain an asbestos survey per NESHAP regulations, immediately after draining the tank.
- B. The Contractor shall perform lead based paint survey per NLLAP requirements, immediately after draining the tank.

1.06 TEST EQUIPMENT FURNISHED BY CONTRACTOR

- A. The Contractor will have, at a minimum, the following calibrated test equipment available on site for use by the Engineer during the progress of the work:

1. Sling Psychrometer
2. Surface Temperature Gauge
3. Continuous monitor for recording interior temperature and humidity during coating application and initial coating cure.
4. Wet Film Thickness Gauge
5. Dry Film Thickness Gauge for Concrete
6. Dry Film Thickness Gauges for ferrous and non- ferrous metals.
7. National Bureau of Standards thickness plates.
8. SSPC VIS-1 and VIS-3- Pictorial Surface Preparation Standard
9. Holiday Detector. Low voltage type such as Tinker & Razor Model M-1, Series 9533
10. Holiday Detector. High voltage type such as DE Stearns 14/20 High Voltage Holiday Detector
11. Micrometer and replica tape for measuring anchor profile per ASTM D 4417 Method C.
12. ICRI Surface Profile Plates for verify concrete texture.

1.07 CONTRACTOR FURNISHED INFORMATION

- A. The following information will be recorded on daily inspection reports as a minimum:
 1. Contractor Name, Project, Date, Inspection Report Number, Quality Control Inspector, Owner, Engineer, Work Start and End Times
 2. Surface preparation and coating application equipment used.
 3. Materials:
 - a. Abrasive used: (Size, Type, Source, Cleanliness)
 - b. Compressed air cleanliness

- c. Coatings applied: (Coat, Type, Manufacturer, Batch No., other information deemed necessary.
 - d. Coating Mixing (Thinners: Type, Manufacturer, Batch No., induction period, pot life and other information deemed necessary.)
 - e. Grouts and sealants: Type, Manufacturer, and other information deemed necessary.
- 4. Surfaces cleaned, surfaces coated and surfaces inspected
 - 5. Surface preparation cleanliness specified and cleanliness achieved.
 - 6. Anchor profile specified and anchor profile achieved
 - 7. Coat applied, color, start and stop application times
 - 8. Dry film thickness measurements required and dry film thickness measured
 - 9. Surfaces requiring rework
 - 10. Contractor Personnel on site including,
 - a. Name, Address, and Phone Number of Supervisor.
 - b. Name, Address, and Phone Number of Foreman.
 - c. Name, Address, and Phone Number of Quality Control Inspector=
 - d. Name of each Crewmember or Laborer.

1.08 CONTRACTOR REQUEST FOR INSPECTION

- A. The Contractor will notify the Engineer, in writing, a minimum of 24 hours in advance for hold point inspections and will assist the Engineer in making all necessary tests and inspections.
- B. No rigging and/or staging shall be removed before required hold point inspection and approval is made. The Contractor shall assist the Engineer in the use and operation of all equipment for access.
- C. The Contractor will make all necessary rigging available to the Engineer and assist in the operation of rigging during all testing operations.
- D. Approval by the Engineer of an area does not release the Contractor from providing the quality and workmanship provided by this Specification.

1.09 COATING THICKNESS AND CONTINUITY

- A. The specified coverage rates of the coatings are minimums. The first coat on metal surfaces refers to the first paint coat and not to conditioning or other pretreatment applications. Coating shall be applied to the thickness specified, and in accordance with the coating manufacturer recommendations.
- B. After each coat has been allowed to dry, the dry film thickness will be measured and recorded. The Contractor shall not apply a successive coat until the dry film thickness of the preceding coat or coats has been approved by the Engineer.
- C. Coating system thickness is the total thickness of all the required coats of paint and does not include passivators or sealers.

- D. Measurement of dry paint thickness over metal surfaces will be done in accordance with SSPC-PA-2, Level 2 (minimum as specified, maximum up to 120% of the maximum specified).

1.10 HOLIDAY TESTING:

- A. All interior tanks coating work on metal and concrete surfaces shall be holiday tested for discontinuities such as pinholes, missed and skipped areas, using a low voltage holiday tester. The Contractor shall furnish Holiday Detectors for the testing. Testing shall be done in accordance with NACE SP0188, Discontinuity (Holiday) Testing of Protective Coatings.
- B. Holiday tests shall not be performed until the finish coat has cured sufficiently that it can be handled without damage, and water will not have a detrimental effect on the coating. Holidays shall be repaired in accordance with the coating manufacturer recommendations and then retested.
- C. The Contractor shall perform the holiday test in the presence of the Engineer

1.11 DELIVERY, STORAGE, AND HANDLING

- A. All coating materials and components shall be delivered to the jobsites in the original, unopened containers, plainly marked with the manufacturer's original labels. Protect materials from freezing and over-heating during shipment.
- B. Store materials not in use in tightly covered containers, in well-ventilated areas with ambient temperatures continuously maintained within the range recommended by the coating manufacturer.
 - 1. Maintain containers in clean condition, free of foreign materials and residue.
 - 2. Remove rags and waste from storage areas daily.
- C. Comply with requirements listed on the manufacturer's Material Safety Data Sheets and all health, fire, EPA and OSHA regulations as regards storage materials.
- D. All coating materials shall be protected from direct sunlight and stored in a separate structure provided by the Contractor. The structure shall be constructed of non-combustible materials.
- E. The Contractor shall be solely responsible for the protection of all the material stored by him at the job site.
- F. All coating materials at the job site shall be subject to inspection.
- G. An approved environmental paint spill kit and container shall be located near the paint storage and mixing areas.
- H. Mixing
 - 1. Mechanical mixers shall be used to mix the coating and coating components in accordance with the coating manufacturer's written instructions. Do not mix partial kits of coating. Containers used for mixing shall be clean and dry. Mixed materials that are not used prior to expiration of the pot life shall be discarded.

2. All coatings materials shall be mixed and thinned in the presence of the Engineer.
3. An appropriate type of fire extinguisher shall be kept in the mixing area.

1.12 SUBMITTALS

- A. Submit the following in accordance with Section 01300. Shop drawings shall consist of manufacturer's cuts or catalogs including descriptive literature and complete characteristics, and code requirements.
 1. Furnish color charts for the interior and exterior primers and topcoat.
 2. A plan for providing adequate ventilation during abrasive blast cleaning, application and curing of coatings in the interior of the tanks.
 3. Provide references to Owner and Engineer for coating material successfully used on similar projects.
- B. Submit a Quality Control Plan per 1.04 B.
- C. Submit the following samples for each type of coating system and in each color and gloss of finish coat indicated.
 1. Color cards for initial finish coat color selections.
- D. Three sets of eight inch by eight-inch samples, on 1/4-in hardboard, of all coats and colors for interior and exterior application with a two-inch band of each coat exposed in step-down fashion. Resubmit until approved.
- E. For each primer, intermediate, and finish coating the Contractor shall provide the Manufacturer's published product data sheet (PDS) or technical data sheet (TDS) and application instructions. Supplement with any of the data listed below if it is not included on the PDS or TDS.
 1. Manufacturer's name, type of paint, brand name, brand code, VOC, volume solids, coverage, surface preparation, drying time, cleanup, color designation, and instructions for mixing and thinning.
 2. Surface preparation recommendations for each substrate to be coated.
 3. Primer, intermediate, and finish coating, pot life and specific mixing instructions.
 4. Minimum and maximum dry and wet film thickness per coat.
 5. Minimum and maximum curing time between coats including atmospheric conditions for each.
 6. Curing time before submergence in liquid.
 7. Thinner and thinning ratios to be used with each paint.
 8. Ventilation requirements.
 9. Allowable atmospheric conditions during which the paint may be applied, including ambient temperature, relative humidity and surface temperature.

10. Allowable applications methods.
 11. Maximum allowable moisture content of surface to be painted.
 12. Maximum storage life.
 13. Manufacturer's certification that painting materials are in accordance with the appropriate reference standards.
 14. Material safety data sheets and cautions concerning health hazards.
- F. The Contractor shall submit to the Engineer a plan for removal/disposal of cleaning and wash down waters.

1.13 COLOR SELECTION

- A. All exterior finish coat colors are selected by the Owner.
- B. Each coat applied shall be of a contrasting color
- C. Interior final coats shall be white
- D. The Contractor shall submit a color chart, from the specified coating manufacturer to the Owner to verify a color for the exterior portions of the tanks. The Owner shall submit their choice to the Contractor in writing before application of coatings.

1.14 DAMAGE CLAIMS

- A. The Contractor shall be responsible for all damages that may be caused by the painting and cleaning operations or any portion of the Work, to surrounding property.
- B. The Contractor shall delegate a responsible and authorized contact person (name, address, phone number, etc.) to address all claims that arise from damage caused by their painting, incidental or not.

1.15 CERTIFICATION

- A. Provide certification signed by supplier of the coating attesting that coating system proposed meets the specifications.

1.16 JOB CONDITIONS

- A. Volatile Organic Compounds (VOC) - VOC ratings (pounds per gallon (PPG) grams per liter (GPL) for coatings specified herein are believed to be in compliance with limits set forth by the air pollution control agency having authority in the area the work is to be performed. The VOC rating for each coating material to be used is included in the appropriate section of these specifications. The Contractor shall verify that each coating used is in compliance with the aforementioned air pollution limits. Thinning of coatings in excess of the coating manufacturer's recommendations is not permitted.
- B. Contact with Potable Water - Interior tanks coatings specified herein are in compliance with the ANSI/NSF Standard 61 and ANSI/NSF Standard 600 for Potable Water Contact.

- C. Safety Requirements - The Contractor shall comply with all health and safety regulations and requirements of OSHA, including but not limited to, 29 CFR Parts 1910 Confined Spaces for General Industry; Final Rule (or State Health and Safety Regulatory Agency), SSPC-PA Guide 3, and the paint and abrasive manufacturers. Should vents, holes, rigging attachments, or any other modification, cutting, or welding be required to meet safety standards, they may be accomplished at the expense of the Contractor upon submitting of details in writing to, and with subsequent approval by the Owner.
- D. Emissions - Compliance with local, state, federal regulations concerning emissions of solid, particulate, or gaseous matter as a result of the cleaning, painting, or other operations under this Agreement shall be the responsibility of the Contractor.
- E. Waste Classification - Contractor shall immediately after Notice to Proceed satisfy all Laws and Regulations pertaining to the classification of waste generated on the project. Waste shall be understood to include abrasive blasting residuals, paint containers, unused paint and thinners, solvents or any other material whose disposal is subject to requirements contained in Laws and Regulations.
- F. Responsibility - The compliance with all regulations shall be accomplished without supervision from the Owner, Engineer, or other direct or indirect agents of the Owner.
- G. No on-site work is to be done between sunset and sunrise. The times for work shall also comply with local, state and federal regulations and laws regarding days of week, noise and interference with activities of surrounding persons. Should tanks interior temperatures be excessive for personnel welfare during daylight hours, permission may be granted by the Owner to conduct work at night provided that the necessary steel temperature, air temperature, humidity and dew point requirements are met. This permission shall only be granted if the Contractor provides the proper lighting and safety equipment.
- H. All rigging attachments present on the tanks shall be carefully inspected by the Contractor prior to use. The Contractor assumes all responsibility for use of any existing or added attachments.
- I. The job site shall be kept in a clean and safe condition at all times. The daily debris shall be collected in covered containers and disposed of in a manner that will place no liability for hazardous waste on the Owner. Absolutely no paint, solvent material, gasoline, oil or other toxic or hazardous material is to be disposed of at or in the vicinity of the tanks site.
- J. The tanks shall be drained during cleaning and painting and curing of the paint.

1.17 PROTECTION OF PROPERTY

- A. All inlet, outlet, and drainpipe openings in the tanks shall be covered by the Contractor with a cover or pneumatic plug to keep blasting abrasive and paint material from entering the openings. Any Owner's equipment in or around the vicinity of the tanks shall be covered to protect it from damage.
- B. Special precautions shall be taken by the Contractor to restrict and control windborne fallout of residue and particulate matter from cleaning and preparation operations,

and/or paint due to the close proximity of adjacent property or vehicles. The Contractor shall schedule and coordinate his work to avoid windborne fallout.

- C. All damage to existing facilities and adjacent property resulting from the Contractor's operations shall be cleaned, repaired or replaced by the Contractor at no additional expense to the Owner, within 30 days of substantial completion, and final acceptance of the work will not be granted nor will final payment be issued until the damage has been repaired to the satisfaction of the Owner.
- D. The tanks must be drained for all tanks painting, including exterior painting.
- E. No painting on the interior and/or exterior of the tanks shall be done when the relative humidity is greater than 85%, or the temperature of the steel is or is expected to be less than 5°F above the dew point temperature during the application and the initial curing the coatings. The above requirements in no way relieve the Contractor from conforming to the requirements of the paint manufacturer if those requirements are more stringent.

1.18 FIRST ANNIVERSARY INSPECTION

- A. The First Anniversary Inspection as described in AWWA D102 shall apply.
- B. The Owner, with the aid of the Contractor, shall conduct the First Anniversary Inspection. The Contractor shall furnish an experienced foreman, scaffolding, rigging and assistance for the inspection and shall be prepared to perform minor touch-up operations. The Contractor shall have at least one gallon of each of the primers, intermediate coatings, and finish coatings at the time of the inspection along with power cleaning tools and abrasive disks for spot cleaning. Touch-up operations shall be completed without additional cost to the owner and shall be considered included as part of the work to furnish and install a proper coating system in accordance with the Contract.
- C. Spot repairs shall be made by the Contractor before returning the tanks back into service. Repairs requiring extensive work and rigging may be delayed until a time mutually agreeable to the Owner and Contractor.
- D. The Contractor shall be responsible for cleaning and disinfection following the First Anniversary Inspection and completion of any touchups and/or repairs. Cleaning and disinfection shall be completed in accordance with ANSI/AWWA C652 and Specifications Section 15050. Cleaning and disinfection following the First Anniversary Inspection shall be completed without additional cost to the owner and shall be considered included as part of the work to furnish and install a proper coating system in accordance with the Contract.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. All coatings shall be supplied by the Contractor. The coatings that will be in contact with potable water shall be NSF/ANSI 61 approved products. All coating materials, thinners and solvents shall be furnished by the same paint manufacturer subject to approval by the Engineer.

- B. Abrasives used for blast cleaning shall meet the requirements of the Steel Structures Painting Council Abrasive Specification No. 1 (SSPC-AB1) Type I or Type II, Class A, Grade - select abrasives of the size necessary to produce an the anchor profile in the range recommended by the coating manufacturer.

2.02 TINTING

- A. Deliver paints such that each coat is of a contrasting color with the exterior finish coat in the color selected by the Owner.
- B. No job tinting is permitted.

2.03 COATING MATERIALS

- A. Coating products manufactured by the Carboline Company, International Paint, PPG/Ameron, Sherwin Williams, Tnemec Company, Inc., or approved equal may be submitted for approval. Proposed substitute manufacturer materials must be proven to meet or exceed the properties of the above manufacturers.
- B. All interior coating materials must be certified in accordance with NSF/ANSI Std. 61 for use on potable water tanks.
- C. Request for substitutions will be considered provided the following minimum conditions are met:
 - 1. The proposed coating system shall use an equal or greater number of separate coats to achieve the required dry film thickness.
 - 2. The proposed coating system shall use coatings of the same generic type.
 - 3. The proposed coating system shall meet or exceed the performance criteria of the specified coating system.
 - 4. Request for substitutions shall have the directions for application and description literature, which includes generic type, nonvolatile content by volume, and information confirming that the substitution is equal to the specified coating system.
- D. No extra contract time will be granted for evaluation of substitute materials.

PART 3 - EXECUTION

3.01 GENERAL

- A. All work shall be accomplished by skilled workmen in a professional manner.
- B. All grinding, abrasive blasting, coating, or lining application shall be done by experienced personnel.
- C. All work shall comply with Local, County, State, and Federal regulations concerning open-air blasting and pollution control.
- D. All rigging shall meet OSHA requirements and shall be operated and maintained in a safe manner, and will conform to industry standards. All rods and other tanks appurtenances that are used for rigging purposes shall be carefully checked for

structural integrity before use in climbing or rigging. Deficiencies shall be reported and corrected before use.

- E. The Contractor shall test all coatings to be removed to determine environmental requirements for removal and proper disposal.
- F. Contain painting operations to prevent overspray and paint spatter.
- G. Surfaces to be prepared and coated shall be cleaned and coated in accordance with Table 3.01-1 and Table 3.01-2

3.02 SAFETY

- A. NOTE: The Contractor is responsible for the integrity of any rigging connections. All rods and rigging points shall be carefully checked for structural integrity before use in climbing or rigging of the tanks. Items found to need repair shall be disassembled, cleaned and repaired. All modifications shall be reviewed by the Engineer before execution.

3.03 PROTECTION OF AREAS NOT TO BE COATED

- A. All areas that are not specified to be coated or repaired shall be adequately protected to avoid any damage during all repairs, washing, blasting, and painting operations. The Contractor shall confer with the Owner before conducting any work, to clarify these areas.
- B. Any damage shall be repaired at the Contractor's expense immediately upon discovery.

3.04 EQUIPMENT

- A. All equipment, (compressor, blast pots and paint pumps, etc.) shall be in good operating condition and of sufficient capacity to provide satisfactory results for cleaning and painting.
- B. Compressed air for blasting and painting shall be free from detrimental amounts of water or oil. Adequate traps and/or dryers shall be provided, per ASTM D 4285.
- C. Adequate lighting, per SSPC Guide 12, shall be provided inside the tanks to properly allow for safety, workmanship and inspection.
- D. Air hoods, respirators and proper and sufficient ventilation shall be provided during blasting, painting and curing.
- E. Contractor must have sufficient explosion proof ventilation equipment to properly and efficiently expel dust and paint fumes out of unit to prevent injury to workmen or the accumulation of volatile gases.
- F. Contractor shall have available at the site, all inspection and measuring equipment such as wet and dry film thickness gages, wet bulb-dry bulb measuring equipment, steel temperature measuring equipment, holiday detector equipment, etc., as required by these Specifications.

3.05 SURFACE PREPARATION METALS

- A. Sharp edges, weld protrusions and other protrusions shall be rounded by grinding. Weld spatter shall be completely removed.
- B. The surfaces to be painted shall be free from mud, oil, grease, dust, moisture, old paint, or other foreign material that would cause adhesion problems.
- C. Pressure washing with clean potable water shall be performed in accordance with SSPC-SP WJ-4 at a minimum 3,000 PSI at the tip. Washing will be performed to remove all dirt, chalked paint, loose paint, mildew, or other foreign material. Pressure washing may be supplemented with brushes, brooms, cleaning agents, etc. to produce a properly cleaned surface. A final rinse of clean potable water shall be used to remove all residue detergents.
- D. All surfaces shall be cleaned in accordance with Table 3.05-1
- E. Surfaces cleaned to bare metal shall be coated during the same work shift that the cleaning was accomplished unless prior arrangements are made with the Owner or Owner's representative. The blasted surfaces will be re-blasted if oxidation occurs prior to application of the prime coat.

3.06 COATING APPLICATION FOR METALS

- A. All coatings shall be from the same manufacturer from among those listed in Table 3.06-1
- B. Stripe coat all edges, corners, welds, bolts and seams on the designated surfaces.
- C. Coatings applied to interior metal surfaces shall be ANSI/NSF 61/NSF 600 approved products.
- D. Coatings applied to exterior metals surface shall include a primer, intermediate at finish coat where the metal substrate or corrosion was exposed.

3.07 SURFACE PREPARATION CONCRETE

- A. Prepare exterior concrete surfaces to be painted using pressurized, clean potable water at 3,200 to 5,000 psi in accordance with ASTM D4259 Section 7 "Water Blast Cleaning".
- B. Prepare the interior concrete walls, floor, and ceiling for coating in accordance with ASTM D4259 Section 8 "Abrasive Blast Cleaning" to achieve a sound concrete surface having a surface texture recommended by the coating manufacture.
- C. Fill bug holes, voids cracks of the interior concrete with an epoxy filler as recommended by the coating manufacture.
- D. Remove all residues, loose materials and debris prior to coating application. Air blow down, water wash down or vacuuming may be used.

3.08 COATING APPLICATION FOR CONCRETE

- A. Prior to coating application test for moisture in concrete in accordance with ASTM D4258 or ASTM F1869 as recommended by the coating manufacture. In no case, shall

coating be applied to concrete surfaces that exceed moisture limits established by the coating manufacturer and Engineer.

- B. Apply coating materials for the exterior and interior concrete surfaces from coating systems identified in Table 3.07-1.

Table 3.05-1 Surface Preparation of Metals

PROCESS	INTERIOR		EXTERIOR	
	Ductile Iron	Carbon Steel	Ductile Iron	Carbon Steel
Pressure Washing	SSPC/NACE WJ-4	SSPC/NACE WJ-4	SSPC/NACE WJ-4	SSPC/NACE WJ-4
Solvent Cleaning	NAPF 500-03-01	SSPC-SP 1	NAPF 500-03-01	SSPC-SP 1
Abrasive Blast Cleaning	NAPF 500-03-05	SSPC-SP 10/NACE No. 2	NAPF 500-03-05	SSPC-SP 6/ NACE No. 3
Power Tool Cleaning	N/A	SSPC-SP 15	NAPF 500-03-03A	SSPC-SP 15 SSPC-SP 3 ^A

Aluminum and other non-ferrous substrates (e.g. galvanizing) shall be pressure washed in the same manner as ductile iron and steel and further prepared per SSPC SP-16 with the intent of removing all existing coating. Avoid blasting damage and distortion of the substrate. Power tools may be used to supplement cleaning. A surface treatment or conversion coating recommended by the coating manufacturer shall be the first coat applied immediately following surface preparation and solvent cleaning.

A-Applies to spot repairs where authorized by the Engineer.

Table 3.06-1 Metal Coating Systems

Interior Coating Metal	First Coat	Second Coat	Finish Coat A
Sherwin Williams	Sherplate 600		Sherplate 600
Tnemec Company	Series 135		Series 1075
Carboline	Hydroplate 1080		Hydroplate 1080
Exterior Coating Metal	First Coat	Finish B Option 1 Waterborne Acrylic	Finish B Option 2 Polyurethane
Sherwin Williams	Macropoxy 646 FC	Sher-Cryl™ HPA High Performance Acrylic	Hi-Solids Polyurethane
Tnemec Company	Chembuild ®Series 135	Enduratone ® Series 1029	Endura-Shield ® II Series 1075
Carboline	Carboguard 890	3359 DTMC (alkyd option)	134 HG (urethane)
Aluminum and Other Non-Ferrous Substrates (e.g. Galvanizing)	First Coat	Second Coat	Finish Coat
Interior	Surface Treatment	Epoxy	Epoxy
Exterior	Surface Treatment	Epoxy	Acrylic or Polyurethane

- A. A third interior coat may be applied as recommended by the manufacturer. It is intended that the finished system film thickness should range from 12 to 18 mils without exceeding the recommended maximum thickness per coat. Three coat application may reduce the occurrence of holidays, particularly in ductile iron pipe.
- B. The finish coat color should be selected to match the existing.
- C. Apply the epoxy and finish coat products used for ductile iron and steel

Table 3.07-1 Coating Systems for Interior Concrete ^A

Interior Coating Concrete	Primer Coat	Finish Coat A
Tnemec Company	Pota-Pox Plus Series N140 or Elasto-Shield Series 264	Pota-Pox Plus Series N140 or Elasto-Shield Series 264
Sherwin Williams	Sherflex S	Sherflex Elastomeric Polyurethane
Carboline	Carbocrete 4010 repair mortar	Hydroplate 1100 (two coats)
Exterior Coating Concrete	Prime Coat	Finish Coat A
Tnemec Company	Series 156 (as needed for repairs)	Series 1026
Sherwin Williams	Loxon Conditioner (as needed for repairs)	Loxon XP
Carboline	Sanitile 120 primer (as needed for repairs)	Flexxide Elastomer

- A. For Manufacturer surface preparation references to CSP (concrete surface profile) See ICRI Guideline No 037032.
- B. B- The finish coat color should be selected to match the existing.

END OF SECTION

SECTION 15044
TESTING OF PIPING AND TANK

PART 1 - GENERAL

1.01 SCOPE OF WORK

- A. Furnish all labor, materials, and equipment required for the pressure testing of all new piping and visual leakage test for the tank valves and appurtenances.

1.02 RELATED WORK

- A. Section 15045 – Disinfection of Process Piping
- B. Section 15062 – Ductile Iron Pipe and Fittings
- C. Section 15100 – Valves and Piping Appurtenances

1.03 SUBMITTALS

A. Test Plan

- 1. Contractor shall submit a pressure testing plan, including piping to be tested, method of testing, test pressures, as required, and durations to the Engineer and Owner for approval prior to initiating testing.
- 2. Contractor shall submit a visual testing plan, including tank piping to be tested, method of testing, as required, and durations to the Engineer and Owner for approval prior to initiating testing.

B. Test Report

- 1. The Contractor shall submit a test report which includes the following information:
 - a. Date and time of tests.
 - b. Name and person/persons conducting tests and company name.
 - c. Test locations.
 - d. All pressure gauge locations and pressures at time of tests, as required.
- 2. Submit five (5) copies of the test reports to the Engineer, Department of Health (DOH) and Owner upon completion of the testing.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.01 GENERAL

- A. Verification that the pipes, valves, and tanks have been cleaned and properly isolated shall be made.
- B. The Contractor is responsible for providing all equipment required to perform the cleaning and testing of the piping, valves, and the tank and for performing the work.

3.02 TESTING PREPARATION

- A. Piping, fittings, and all appurtenances shall be in place and anchored before performing the pressure testing.
- B. Conduct hydrostatic tests after installed and attached to the pipe supports, hangers, anchors, expansion joints, valves, and meters.
- C. Before conducting hydrostatic tests, the pipes and tanks must be cleaned.
 - 1. Pipe and tank disinfection shall be completed in accordance with Section 15405. Prior to any disinfection operations, the Contractor shall notify the Owner and the Engineer for coordination.
- D. Testing of new pipes which are to be connected to existing pipes shall be isolated from the existing line by means of pipe caps, special flanges, or blind flanges. After the new line has been successfully tested, remove caps or flanges and connect to the existing piping.

3.03 TESTING

- A. Hydrostatic Testing:
 - 1. Hydrostatic testing shall be completed in accordance with AWWA C600
 - 2. All air shall be purged while the piping is being filled with water. Once all of the air is removed, the piping system shall be subjected to the required test pressure for a preliminary test. All joints, fittings, valves, and connections shall be examined for leaks. Correct leaks prior to starting the actual test.
 - 3. Once all visible leaks have been repaired, the test pressure shall be applied and maintained for a period of 2 hours. No allowable leakage is acceptable.
- B. Visual Testing:

1. All air shall be purged while the piping and tank is being filled with water. All joints, fittings, valves, and connections shall be examined for leaks. Correct all leaks and reset until no leaks are present.

END OF SECTION

**SECTION 15045
DISINFECTION OF PROCESS PIPING**

PART 1 - GENERAL

1.01 SCOPE OF WORK

- A. Furnish all labor, material, and equipment required for the disinfection of all new or modified potable water piping and equipment.

1.02 RELATED WORK

- A. Section 15100 – Valves and Appurtenances
- B. Section 15062 – Ductile Iron Pipe and Fittings

1.03 REFERENCES

- A. American Water Works Association (AWWA)
- B. National Sanitation Foundation (NSF)

1.04 SUBMITTALS

- A. Test Reports
 - 1. The Contractor shall submit disinfection reports which include the following information:
 - a. Type and form of disinfectant used.
 - b. Date and time of disinfectant spraying or swabbing start and time of completion.
 - c. Test locations.
 - d. Initial and 24 hour disinfectant residuals for each outlet tested.
 - e. Date and time of flushing start and completion.
 - f. Disinfectant residual after flushing for each outlet tested.
 - 2. The Contractor shall submit bacteriological reports which include the following information:
 - a. Date issued, project name, and testing laboratory name, address, telephone number, and state certification number.
 - b. Date and time of water sample collection.
 - c. Name of person collecting samples and company name.
 - d. Test locations.

- e. Initial and 24 hour disinfectant residuals for each outlet tested.
 - f. Coliform bacteria test results for each outlet tested.
 - g. Certification that water conforms to bacteriological standards of AWWA.
 - h. Bacteriologists' signature and authority.
3. Submit three (3) copies of the test reports to the City's designated Inspector upon completion of the testing.

PART 2 - PRODUCTS

2.01 DISINFECTION CHEMICALS

- A. All chemicals used for disinfection shall meet AWWA B300 and/or AWWA B301 and shall be NSF 60 approved.

PART 3 - EXECUTION

3.01 GENERAL

- A. Before being placed in service, all new process pipes shall be chlorinated in accordance with the specifications below and the procedures outline in AWWA C653, Disinfection of Water Treatment Plants, and AWWA C651, Disinfecting Water Mains. Disinfection of process piping shall be witnessed by the Engineer.

3.02 FLUSHING

- A. Sections of pipe to be disinfected shall first be flushed to remove any solids or contaminated material that may have become lodged in the pipe. Full bore flushing is not required for the 24-inch water main. However, being a potable water main each segment of pipe shall be swabbed before the next piece is laid, and shall be protected from any source of contamination, in accordance with AWWA C651.
- B. All taps required for chlorination or flushing purposes, or for temporary or permanent release of air, shall be provided for by the Contractor as a part of the construction of the process piping. After the disinfection, all such taps shall be sealed to the satisfaction of the Engineer.

3.03 DISINFECTION CRITERIA

- A. Before the system is put into operation, all process pipes and appurtenances and any item of new construction with which the water comes in contact, shall be thoroughly sterilized in accordance with AWWA C651 or C653. All piping, valves, fittings and all other appurtenances connections shall be sprayed disinfected or swabbed with a minimum 1 percent solution chlorine just before being installed, if the total length of

the connection from the end of a new main to the existing main is equal to or less than 20 feet.

3.04 FORM OF APPLIED CHLORINE

- A. Chlorine may be applied as a liquid chlorine (gas-water mixture), or a mixture of water and sodium hypochlorite, as required. The Contractor shall assume responsibility for safe handling of chlorine and shall meet requirements of OSHA and other regulatory agencies for safe handling of chlorine.

3.05 FINAL FLUSHING AND TESTING

- A. Following chlorination, all treated water shall be thoroughly flushed from the newly constructed pipe and appurtenances at its extremity until the replacement water throughout its lengths shows upon test, a free chlorine residual not in excess of that normally carried in the system.
- B. After flushing, water samples collected on two (2) successive days from the treated piping system, as directed by the Florida Department of Environmental Protection (FDEP), shall show acceptable bacteriological results. Contractor to use a certified laboratory and reporting format per 62-550.730 Florida Administrative Code. Copies of testing results and all related correspondence shall be submitted to the Engineer.
- C. Bacteriological sampling and testing procedures shall be paid for by the Contractor.

3.06 REPITITION OF FLUSHING AND TESTING

- A. Should the initial treatment result in an unsatisfactory bacterial test, the original chlorination procedure shall be repeated by the Contractor until satisfactory results are obtained.

END OF SECTION

**SECTION 15050
CLEANING AND DISINFECTION OF TANK**

PART 1 - GENERAL

1.01 SCOPE

- A. This section covers the cleaning and disinfection of the Ground Storage Tanks.
- B. Unless otherwise specified, disinfection work shall not be started until cleaning of the structures have been completed.
- C. Cleaning and disinfection of pipelines shall be consistent with the requirements in the Specification 15045 - Disinfection of Process Piping.

1.02 GENERAL

A. Governing Standard

- 1. Cleaning and disinfection work shall conform to the requirements of ANSI/AWWA C652, and as specified herein.

B. Disinfection Plan

- 1. Prior to starting any disinfection work, the Contractor shall prepare a detailed disinfection plan. The plan shall cover the method and procedure proposed, necessary coordination, sequence of operations, equipment to be used, the manner of filling and flushing of each structure specified herein to be disinfected, and the neutralization and disposal of wasted water. The plan shall be in compliance with this Specification and all procedures shall be subjected to acceptance by the Owner.

C. Coordination

- 1. The Contractor shall coordinate disinfection work with adjacent work, and with the Owner's operation of the existing facilities, as necessary to preclude work interference or duplication of effort and to expedite the overall progress of the work.

D. Equipment and Facilities

- 1. The Contractor shall provide all necessary piping connections, temporary valves, sampling taps, pumps, disinfectant, neutralization agents, chlorine residual test apparatus, and all other items of equipment or facilities required to complete the disinfection work.

E. Water

- 1. Water required for cleaning and disinfection of these structures will be furnished by the Owner for the first fill of the tank. Contractor will be responsible to provide water for any additional tank fills required for cleaning and disinfection of the tank.

F. Chlorine Residual Tests

1. The Contractor shall provide the necessary apparatus for making chlorine residual tests by the drop dilution method in accordance with Appendix A of ANSI/AWWA C652. Tests will be made by the Contractor's approved laboratory.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.01 CLEANING OF STRUCTURES

- A. The tank shall be kept clean until they have been placed in services or until final acceptance by the Owner. All dirt, debris, rubbish, and construction materials shall be removed from the interior of structures.
- B. The tank shall be thoroughly cleaned after the work has been completed. All water remaining in the structures after the cleaning has been completed shall be removed by means of dewatering pumping equipment or other methods acceptable to the Engineer. All cleaning of the structures shall have been completed and the resulting water removed before disinfection work is started.

3.02 STRUCTURES TO BE DISINFECTED

- A. The following structures shall be disinfected as specified herein:
 1. Northwest Ground Storage Tank
 2. Morris Bridge East Ground Storage Tank

3.03 DISINFECTION PROCEDURES FOR TANK

- A. After all work, including testing and cleaning, has been completed, the interior of the structure shall be disinfected.
- B. Disinfection procedures for the tank shall be as noted herein. Water and chlorine shall be added to the storage facility in amounts such that the solution will satisfy the chlorine demand and have a measurable residual of at least 1.0 mg/L after being held at a full level for 24 hours. Chlorine shall be added to the tank as needed to maintain the chlorine residual. The chlorine used shall be NSF approved for drinking water. The water shall be provided by the Contractor, upon Owner approval.
- C. After the disinfection is satisfactory, the Contractor will perform required bacteriological tests. Two consecutive sets of acceptable samples, taken at least 24 hours apart, shall be collected and the presence or absence of coliform organisms measured for each sample. Only when the tank satisfactorily passes the bacteriological tests, may it be placed into service.

3.04 DISPOSAL OF CHLORINATED WASTEWATER

- A. The water used for disinfecting the tank shall be disposed through the existing tank drain line and into the storm/sanitary sewer system, as available. Note that the

chlorine in the water shall be neutralized prior to discharge. The neutralization shall be verified by checking the chlorine residual at, or upstream of, the discharge point. The Contractor may use the new pumps or provide alternate means by which to pump the chlorinated water from the tank. Provisions for impoundment (for additional contact time for the neutralizing agent and / or for energy dissipation) shall be the responsibility of the Contractor.

END OF SECTION

**SECTION 15062
DUCTILE IRON PIPE AND FITTINGS**

PART 1 - GENERAL

1.01 SCOPE OF WORK

- A. Furnish all labor, materials, equipment and incidentals required and install, as shown on the Drawings, all ductile iron piping, ductile iron fittings, and appurtenances as specified herein.

1.02 RELATED WORK

- A. Division 1 – General Requirements
- B. Section 02140 – Dewatering and Drainage
- C. Section 02220 – Excavating, Backfilling, and Compacting
- D. Section 09905 – Piping, Valve, and Equipment Identification System
- E. Section 09910 – Utility System Painting
- F. Section 15044 – Pressure Testing of Process Piping
- G. Section 15045 – Disinfection of Process Piping
- H. Section 15126 – Pipe Hangers and Supports

1.03 REFERENCES

- A. American Water Works Association (AWWA)/American National Standards Institute (ANSI) Standards
- B. American Society for Testing and Materials (ASTM) Standards
- C. NSF/ANSI 61: Drinking Water System Components – Health Effects

1.04 GENERAL DESIGN

- A. The equipment and materials specified herein is intended to be standard types of ductile iron pipe or ductile iron fittings for use in transporting potable water.

1.05 QUALITY ASSURANCE

- A. Qualifications: All of the ductile iron pipe and ductile iron fittings shall be furnished by manufacturers who are fully experienced, reputable, and qualified in the manufacture of the materials to be furnished. The pipe and fittings shall be designed, constructed, installed in accordance with the best practices and methods and shall comply with these specifications as applicable.
- B. Standards:
 - 1. Ductile iron pipe shall conform to ANSI/AWWA C151/A21.51.
 - 2. All wetted surfaces and linings shall be NSF 61 approved.
- C. Factory Tests: The manufacturer shall perform the factory tests described in ANSI/AWWA A21.51/C151.
- D. Quality Control:
 - 1. The manufacturer shall establish the necessary quality control and inspection practice to ensure compliance with the referenced standards. All pipe on this project shall be supplied by a single manufacturer unless otherwise accepted in writing by the Engineer.
 - 2. In addition to the manufacturer's quality control procedures, the Owner may select an independent testing laboratory to inspect the material at the foundry for compliance with these specifications. The cost of foundry inspection requested by the Owner will be paid for by the Owner.

1.06 SUBMITTALS

- A. Shop Drawings: Refer to Section 01340, Submittals. Provide the following:
 - 1. Manufacturer's literature, catalog cuts, and specifications showing dimensions and materials of construction.
 - 2. Shop drawings shall include dimensioning, methods and locations of supports and all other pertinent technical specifications.
 - 3. Submit shop drawings, including layouts, within and under buildings and structures.
 - 4. Shop drawings shall be prepared by the pipe manufacturer.
 - 5. Shop drawings for piping within and under buildings and structures shall be submitted within 30 days of Execution of Contract.
- B. Operating Instructions: Submit Operation and Maintenance Manuals in accordance with Section 01730, Operating and Maintenance Data.
- C. Manufacturer's Certification: Submit sworn certification of factory tests and their results.

1.07 DELIVERY, STORAGE AND HANDLING

- A. Delivery and Storage: Delivery and storage of the materials shall be in accordance with the manufacturer's recommendations.
- B. Handling: Care shall be taken in loading, transporting and unloading to prevent damage to the pipe or fittings and their respective coatings. Pipe or fittings shall not be rolled off the carrier or dropped. Unloading shall be done by lifting with a forklift or crane. All pipe or fittings shall be examined before laying, and no piece shall be installed which is found to be defective.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Ductile Iron Pipe

- 1. Ductile iron pipe shall meet ANSI A21.51 and AWWA C151, latest edition.
- 2. Thickness:
 - a. Below ground piping: Class 250 (20"-54") unless otherwise noted or specified.
 - b. Above ground piping: Flanged, Special Thickness Class 53 rated for a maximum working pressure of 250 psi, per ANSI/AWWA C115/A21.15, unless otherwise noted or specified
- 3. Joints:
 - a. Push-on (below ground piping):
 - i. Pipe shall be supplied with all joint accessories required to make the connection:
 - I. Push-on pipe accessories shall include gaskets and lubricant in sufficient quantity for the proper assembly of each joint. Gaskets for push-on joints shall be ethylene propylene diene (EPDM) rubber. All plain ends shall be painted with a circular stripe on the pipe barrel to allow a visual means of checking proper assembly.
 - ii. Standards: ANSI/AWWA C111/A21.11
 - iii. Class: 250 psi water working pressure rating.
 - iv. Manufacturers: U.S. Pipe and Foundry Co., McWane, Inc., American Cast Iron Pipe Co, or approved equal.

- b. Restrained Joints:
 - i. Any below grade push-on pipe joint(s) at other than valve or fitting connections shall be restrained with boltless restraining gaskets (i.e. locking or gripper type gaskets, consisting of an EPDM rubber gasket with high-strength stainless steel locking elements vulcanized into the gasket, which when activated develop wedging action between the pairs of stainless steel elements spaced around the gasket and the pipe). Pipe shall be US Pipe Field-Lok 350 ® or equal.
 - ii. Restrained gaskets shall be rated to 350 psi and tested in accordance with ANSI/AWWA C111/A21.11.
- c. Flanged (above ground, inside below ground vaults):
 - i. All flanges shall be ductile iron and shall be manufactured and installed on ductile iron pipe in accordance with ANSI/AWWA C115/A21.15. Bolt circle and bolt holes shall be drilled and faced to match ANSI B16.1, Class 125 Flanges. All accessory hex-head bolts and nuts, and full-faced gaskets for each joint size shall be furnished as a Flange Accessory Package. Bolts, nuts, and washers shall be Type 316 stainless steel.
 - ii. Standards: ANSI/AWWA C115/A21.15 and ANSI B16.1
 - iii. Class: 125 lb factory applied screwed long hub flanges, plain faced without projection.
 - iv. Gaskets:
 - I.* Spans less than 10 feet: full face 1/8-inch thick neoprene rubber
 - II.* Spans greater than 10 feet: Toruseal gaskets as manufactured by American Cast Iron Pipe Co. or approved equal.
 - v. Manufacturers: U.S. Pipe and Foundry Co., American Cast Iron Pipe Co., or approved equal.
- d. Pipe Length (below ground installation): 18 or 20 feet maximum nominal length.

B. Ductile Iron Fittings

- 1. Mechanical Joint:
 - a. Fittings shall be supplied with all joint accessories required to make the necessary connections.
 - b. Mechanical joint fittings shall be manufactured in accordance with ANSI/AWWA C111/A21.11 and C153/A21.53. Mechanical joint bolts and nuts shall be manufactured of high-strength, low-allow steel having the characteristics listed in Table 6 of AWWA C111. Gaskets

for mechanical joints shall be made of ethylene propylene diene (EPDM) rubber.

- c. Mechanical restraint devised used to restrain plain ends of ductile iron pipe to push on, mechanical, or flange joints, or fittings which meet ANSI/AWWAC110-A21.10 and ANSI/AWWA C-111/A21.11, latest revisions. Wedge action restraint for mechanical and flange joint pipe and fittings shall be incorporated in the design of the follower gland and shall include a restraining mechanism which imparts multiple wedging actions against the pipe. Twist off nuts shall be used to ensure proper actuating.

2. Flanged:

- a. Flanged fittings shall be manufactured in accordance with ANSI/AWWA C110/A21.10. All necessary hex-head bolts and nuts, and full faced gaskets for each joint shall be furnished as a Flange Accessory Package and shall conform to ANSI B18.2.2; threads shall be manufactured in accordance with ANSI B1.1. Bolts, nuts, and washers shall be Type 316 stainless steel. Bolt circle and bolt holes shall be drilled and faced to match ANSI B16.1, Class 125 Flanges.
- b. Class: 125 lb, plain.

3. Pipe manufacturers

- a. U.S. Pipe and Foundry Co., American Cast Iron Pipe Co., Tyler/Union, or approved equal.
- b. Restraint Manufacturers:
 - i. Ductile iron push-on joint restraint devices shall be US Pipe “Field-Lok” Gasket, American “Fast-grip” Gasket, or approved equal.
 - ii. Ductile iron pipe flange joint restraint devices shall be EBAA Megaflange series 2100.
 - iii. Wedge action restraint for ductile iron pipe mechanical joints shall be EBAA Iron “Megalug, Series 1100”

2.02 COATINGS AND LININGS

- A. Ductile iron pipe shall have a cement mortar lining and asphaltic seal coat complying with ANSI/AWWA C104/A21.4 and NSF 61. Exterior coatings shall be in accordance with ANSI/AWWA C151/A21.51 and shall have a prime coat compatible with the field finish coatings.
- B. Fittings shall have a cement mortar lining and asphaltic seal coating, or shall be supplied with a fusion applied epoxy coating, both inside and outside for total protection. All fittings for installation above ground shall be epoxy coated.
 - 1. Cement mortar lined fittings shall have a standard thickness cement mortar lining and asphaltic seal coat complying with ANSI/AWWA C104/A21.4 and

NSF 61. Exterior coatings shall be in accordance with ANSI/AWWA C151/A21.51 and shall have a prime coat compatible with field finish coatings.

2. Fusion epoxy coated fittings shall have an epoxy coating shall be certified by the manufacturer as approved for use in potable water applications. The epoxy coating shall meet AWWA C550, ANSI/AWWA C116/A21.16, and NSF 61 requirements. Nominal coating and lining thickness shall be 6 to 8 mils dry film thickness.

C. Pipe and fittings shall be painted according to Section 09910 – Utility System Painting.

2.03 POLYETHYLENE ENCASEMENT

A. Polyethylene encasement shall conform to the requirements of ANSIAWWA C105/A21.5 Method A and shall be 8 mil thick.

B. The raw material used to manufacture polyethylene encasement shall be Type 1, Class A Grade E-1 in accordance with ASTM D-1248. The polyethylene shall meet the following test requirements:

Tensile Strength	1200 PSI minimum
Elongation	300% minimum
Dielectric Strength	800 V/Mil Thickness minimum
Thickness 0.008”	(8 mils) minimum nominal with minus tolerance not exceeding 10% of nominal
Melt Index	0.4 maximum

PART 3 - EXECUTION

3.01 INSTALLATION

A. Standards: Installation of ductile iron pipe shall be in accordance with manufacturer’s recommendations, AWWA C600, and as described in these technical specifications.

B. Underground Ductile Iron Pipe and Fittings

1. Pipe Cradle: Upon satisfactory installation of the pipe bedding material as specified in Section 02220 – Excavating, Backfilling, and Compacting, a continuous trough for the pipe barrel and recess for the pipe bells or couplings shall be excavated by hand digging. When the pipe is laid in the prepared trench, true to line and grade, the pipe barrel shall receive continuous, uniform

support and pressure will be exerted on the pipe joints from the trench bottom. Blocking under the pipe will not be permitted.

2. Dewatering: Water shall not be allowed in the trenches while the pipes are being laid and/or tested. Contractor shall not open more trenches than the available pumping facilities are able to dewater to the satisfaction of the Engineer. The Contractor shall assume responsibility for disposing of all water so as not to injure or interfere with the normal drainage of the area being worked in. In no case shall the pipelines being installed be used as drains for such water. See Section 02140 – Dewatering for more information.
3. Cleanliness: The interior of the pipes shall be thoroughly cleaned of all foreign matter before being gently lowered into the trench and shall be kept clean during laying operations by means of plugs or other methods directed by the Engineer. During suspension of work for any reason at any time, a suitable stopper shall be placed in the end of the pipe last laid to prevent mud or other foreign material from entering the pipe.
4. Survey Line and Grade: Lines shall be laid straight and depth of cover shall vary to provide uniform gradient or slope to pipe, whether grading is completed or proposed at time of pipe installation. When a grade or slope is shown on the Drawing, batter boards with string line paralleling design grade, or other previously directed means, shall be used by the Contractor to assure conformance to required grade and minimum required cover over the piping. The Contractor shall provide line and grade stakes at 100-foot maximum spacing and at all line and/or grade change locations. The minimum pipe cover shall be 48-inches below the finished grade surface or as shown on the Drawings.
5. Pipe Joint Deflection: Deflection of joints shall not exceed that recommended by the manufacturer or exceed 50% of that allowed under AWWA C600 for the type of joint being installed, whichever is less.
6. Pipe and Fittings Inspection: All pipe and fittings shall be inspected prior to lowering into trench to ensure no cracked, broken, or otherwise defective materials are being used. All homing marks shall be checked for proper length so as to not allow a separation or over homing of connected pipes. Homing marks incorrectly marked on pipe shall result in rejection of the pipe and removal from the site at the Contractor's expense.
7. Joint Compounds: No sulfur based joint compound shall be used.
8. Polyethylene Encasement: All buried ductile iron pipe shall be polyethylene encased. Prior to polyethylene encasement, all nuts, bolts, and other parts of the valve joints shall be coated with two coats, 10 mils DFT per coat, of bituminous paint, Tnemec Series 46-465, Carboline Bitumastic 50, or equal.
9. Identification: Each run of ductile-iron potable water pipe shall be wrapped with a continuous length of tape, in accordance with the standard details and Section 09905 – Piping, Valve, and Equipment Identification System. Tape

for spiral wrapping shall be minimum 2” wide blue vinyl tape, with a minimum of three spiral wraps per pipe section.

10. Joint Placement:
 - a. Push on joints: Pipe shall be laid with the bell ends facing upstream. The gasket shall be inserted and the joint surfaces cleaned and lubricated prior to placement of the pipe. After joining the pipe, a metal feeler shall be used to verify that the gasket is correctly located.
 - b. Mechanical Joints: Pipe and fittings shall be installed in accordance with the "Notes on Method of Installation" under ANSI/AWWA C111/A21.11. The gasket shall be inserted and the joint surfaces cleaned and lubricated with soapy water before tightening the bolts to the specified torque.
11. Anchorage of Fittings: Adequate precautions shall be taken to prevent the separation of joints at bends, tees, and plugged ends. Details of design, construction, applications, installations, and number of joints necessary for the restraint of a given thrust shall be as specified in these specifications or as indicated on the plans.
12. Backfilling: Backfilling shall be in accordance with Section 02220 – Excavating, Backfilling, and Compaction.

C. Above Ground and Exposed Ductile Iron Pipe and Fittings

1. Alignment: Piping shall be installed along straight line and grade between fittings unless other lines of alignment or grade changes have been indicated. Modifying alignments or grades during construction must be approved by the Engineer prior to installation.
2. Above ground and exposed piping shall be cut accurately to measurements established at the job site and shall be worked into place without springing or forcing, properly clearing all equipment access areas and openings. Changes in sizes shall be made with appropriate reducing fittings. Pipe connections shall be made in accordance with the details shown and manufacturer’s recommendations. Open ends of pipes shall be properly capped or plugged during installation to keep dirt and other foreign material out of the system. Pipe supports and hangers shall be provided where indicated, as required to insure adequate support of the piping, or as specified in Section 15126 – Pipe Hangers and Supports.
3. All pipe and appurtenances connected to equipment shall be supported in such a manner as to prevent any strain being imposed on the equipment. When manufacturers have indicated requirements that piping loads shall not be transmitted to their equipment, a certification shall be submitted stating that such requirements have been complied with.

4. Assembling Flanged Joints

- a. Bolt holes of flanges shall straddle the horizontal and vertical centerlines of the pipe. Clean flanges by wire brushing before installing flanged fittings. Clean flange bolts and nuts by wire brushing, lubricate bolts with oil and graphite.
- b. Insert the nuts and bolts (or studs) finger tighten, and progressively tighten diametrically opposite bolts uniformly around the flange to the proper tension.
- c. Care shall be used when tightening joints to prevent undue strain upon valves, pumps, and other equipment.
- d. If flanges leak under pressure testing, loosen or remove the nuts and bolts, reset or replace the gasket, reinstall or retighten the bolts and nuts, and retest the joints. Joints shall be watertight with no visible leakage under normal operational or testing conditions.

5. Tapped Connections

- i. Make all tapped connections as shown on the Drawings or as directed by the Engineer.
- ii. Make all connections watertight and of adequate strength to prevent pullout.
- iii. Drill and tap normal to the longitudinal axis of the pipe.

D. Cutting: When required, cutting shall be done by machine, leaving a smooth cut at right angles to the axis of the pipe. Cut ends of the pipe to be used with a push-on bell shall be beveled.

E. Thrust Restraint

1. General: Thrust restraint shall be accomplished by the use of mechanical restraining devices unless specifically identified otherwise on the Drawings or herein.
2. Length of Restrained Joints: In accordance with the lengths listed in the table as shown on the Drawings.

3.02 CLEANING AND FIELD TESTING

A. General: At the conclusion of the work, the Contractor shall thoroughly clean the new pipelines by flushing with water and swabbing to remove all dirt, stones, and other material which may have entered the line during construction.

1. All Connections to existing piping system shall be made as shown or indicated on the plans after consultation and cooperation with the Engineer. No such connection shall be made until all requirements of these specifications as to tests, cleaning, flushing, and disinfection of new work have been met, and the planned cut-in to the existing line has been approved by the Department. Where connections are made between new work and existing infrastructure,

the connections shall be made in a thorough and workmanlike manner using proper fittings and necessary appurtenances. The Contractor shall be responsible for scheduling work with the department if installation of new infrastructure must be done during off-peak hours as required by the Department.

B. Flushing and Swabbing

1. Flushing: Preliminary flushing may be accomplished through a full diameter flush or swabbing. Preliminary flushing may be used prior to swabbing. Preliminary flush shall have a minimum of 2.5 feet per second full diameter in accordance with AWWA C651. The Contractor shall dispose of the flushing water without causing a nuisance or property damage. The Contractor shall arrange with the Owner the source of the flushing water. Prior to any testing being performed, the Contractor shall submit and have approved the required record drawings.
2. Swabbing: All new water mains shall be Swabbed with a minimum 1 percent chlorine solution in accordance with AWWA C651 before being installed.

C. Hydrostatic Testing: The Contractor shall perform hydrostatic testing on all new or modified pipe as per Section 15044 – Pressure Testing of Process Piping.

3.03 PAINTING

- A. Above ground and exposed ductile iron pipe shall be painted following successfully completing hydrostatic pressure and leakage testing, with the pipes empty.
- B. Pipe shall be degreased with solvent and wiped dry immediately prior to the application of the specified coating.
- C. Pipe shall be painted and identified per Section 09905 – Piping, Valve, and Equipment Identification System and Section 09910 – Utility System Painting.

3.04 DISINFECTION AND FINAL CLEARANCE

- A. General: Before being placed into service, all potable water pipelines shall be disinfected by chlorination. Taps for chlorination and sampling shall be uncovered and backfilled by the Contractor as required. During the chlorination period, valves and appurtenances in the treated section shall be operated to ensure that they are disinfected with the new pipe.
- B. Disinfection: The Contractor shall disinfect all new or modified pipe as per Section 15045 – Disinfection of Process Piping.
- C. Approval: The water line, including process piping, shall not be placed in service until the requirements of the State and/or City Public Health Department are met and authorization is provided by the City..

END OF SECTION

**SECTION 15126
PIPE HANGERS AND SUPPORTS**

PART 1 - GENERAL

1.01 SCOPE OF WORK

- A. Furnish and install all pipe hangers and supports as indicated and as specified herein.

1.02 RELATED WORK

- A. Division 1 – General Requirements
- B. Section 15062 – Ductile Iron Pipe and Fittings
- C. Section 15100 – Valves and Piping Appurtenances

1.03 REFERENCES

- A. American Water Works Association (AWWA)/American National Standards Institute (ANSI) Standards
- B. American Society for Testing and Materials (ASTM) Standards

1.04 GENERAL DESIGN

- A. The Drawings depict only minimum pipe support locations. Adequate pipe supports shall be supplied for all piping systems to provide a rigid overall installation and additional support for pipe ends when equipment is disconnected.

1.05 QUALITY ASSURANCE

- A. Hangers and supports shall be of approved standard design where possible and shall be adequate to maintain the supported load in proper position under all operating conditions. The minimum working factor of safety for pipe supports shall be five (5) times the ultimate tensile strength of the material, assuming 10 feet of water filled pipe being supported.
- B. All pipe and appurtenances connected to equipment shall be supported in such a manner as to prevent any strain being imposed on the equipment. When manufacturers have indicated requirements that piping loads shall not be transmitted to their equipment, the Contractor shall submit a certification stating that such requirements have been compiled with.

1.06 SUBMITTALS

- A. Shop Drawings: Refer to Section 01340. Provide the following:
 - 1. Manufacturer's literature, catalog cuts, and specifications showing dimensions and materials of construction.

1.07 DELIVERY STORAGE AND HANDLING

- A. Delivery and Storage: The equipment provided under this section shall be shipped, handled and stored in accordance with the Manufacturer's written instructions, and in accordance with Section 01600.

1.08 WARRANTY AND GUARANTEES

- A. Provide equipment warranties in accordance with Section 01740 – Warranties and Bonds.

PART 2 - PRODUCTS

2.01 GENERAL

- A. Structural design and selection of support system components shall withstand the dead loads imposed by the weight of the pipes filled with water, plus any insulation. Commercial pipe supports and hangers shall have a minimum safety factor of 5. All supports shall be designed to adequately secure the pipe. All pipe supports shall be approved prior to installation.
- B. All support anchoring devices, including anchor bolts, inserts and other devices used to anchor the support onto a concrete base, roof, wall or structural steel works, shall be of the proper size, strength, and spacing to withstand the shear and pullout loads imposed by loading and spacing on each particular support.
- C. All materials used in manufacturing hangers and supports shall be capable of meeting the respective ASTM Standard Specifications with regard to tests and physical and chemical properties, and be in accordance with MSS SP-58.
- D. Hangers and support shall be spaced in accordance with ANSI B31.1.0 except that the maximum unsupported span shall not exceed 10 feet unless otherwise specified herein.
- E. Unless otherwise specified herein, pipe hangers and supports shall be stainless steel (SS 316) or where noted, galvanized steel, as manufactured by Anvil International, Carpenter and Paterson, Inc., Atkore International, Inc, or approved equal. 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.

Any item comparable in type, style, quality, design, and performance will be considered for approval.

2.02 MATERIALS AND EQUIPMENT

A. Pipe Hangers and Supports for Metal Pipe:

1. Floor supported pipes shall be supported by adjustable pipe saddle supports as directed by the Engineer.
 - a. Each pipe saddle support shall be screwed or welded to the corresponding size 150 pound companion flanges or slip-on welding flanges respectively. Supporting pipe shall be of stainless steel pipe construction. Each flange shall be secured to the concrete floor by a minimum of two (2) expansion bolts per flange. Where used under base fittings, a suitable flange shall be substituted for the saddle.

PART 3 - EXECUTION

3.01 PREPARATION

- A. Prior to prime coating, all pipe hangers and supports shall be thoroughly clean, dry and free from all mill-scale, rust, grease, dirt, paint, and other foreign substances to the satisfaction of the Engineer.
- B. All submerged pipe supports shall be prime coated with Epoxy Primer or equal. All other pipe supports shall be prime coated with rust-inhibitive Primer as manufactured Carboline or equal.
- C. Do not coat/paint stainless steel hangers or components.

3.02 INSTALLATION

- A. All pipes, horizontal and vertical, shall be rigidly supported from the structure by approved supports. Supports shall be provided at changes in direction and elsewhere as shown in the Drawings or specified herein. No piping shall be supported from other piping or from metal stairs, ladders, and walkways, unless it is so indicated on the Drawings, or specifically directed or authorized by the Engineer.
- B. All pipe supports shall be designed with liberal strength and stiffness to support 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. Prior to installation, all pipe supports shall be approved by the Engineer.

- C. Pipe supports shall be provided to minimize lateral forces through valves, both sides of split 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.
- D. All vertical pipes shall be supported at each floor or at intervals of at least 15 feet by approved pipe collars, clamps, brackets, or wall rests, and at all points necessary to insure rigid construction.
- E. Effects of thermal expansion and contraction of the pipe shall be accounted for in pipe support selection and installation.
- F. Responsibility for the proper location of pipe supports is included under this Section.
- G. Continuous metal inserts shall be embedded flush with the concrete surface.
- H. Standard Pipe Supports:
 - 1. Horizontal Piping Supported From Floors:
 - a. Stanchion Type:
 - i. Pedestal type; adjustable with stanchion, saddle, and anchoring flange.
 - ii. Use yoke saddles for piping whose centerline elevation is 18 inches or greater above the floor and for all exterior installations.
 - iii. Provide neoprene waffle isolation pad under anchoring flanges, adjacent to equipment or where otherwise required to provide vibration isolation.
 - 2. Existing Walls and Ceilings: Install as specified for new construction, unless shown otherwise.

END OF SECTION

Appendix A

Field Photos –NWPS GST



Figure 1. NWPS GST Interior



Figure 2. NWPS GST Interior Concrete Walls
The interior tank wall had efflorescence along cracks in the concrete.



Figure 3. NWPS GST Interior Dome
Cracks were present in the tank interior dome.



Figure 27. NWPS GST Interior DIP Pipe
Corrosion on coated interior pipe.



Figure 4. NWPS GST Interior DIP Pipe
Corrosion on coated interior pipe.



Figure 5. NWPS GST Hatch
No access ladder from dome hatch.



Figure 6. NWPS GST Identification Plate from 1969



Figure 7. NWPS GST Exterior Tank Wall
Cracks on the exterior tank wall.



Figure 8. NWPS GST Exterior Ladder

The exterior galvanized steel ladder and climbing device are in adequate condition with minor corrosion.



Figure 9. NWPS GST Dome Access Hatch
There is no handrails and ladder cage.



Figure 10. NWPS GST Dome Access Hatch
Hardware on the fiberglass access hatch was rusting. There was cracking on the hatch curb.



Figure 11. NWPS GST Center Dome Vent
Corrosion on metal vent supports and cracking on vent curb.



Figure 12. NWPS GST Dome
Cracks were not visible on the dome.



Figure 13. NWPS GST 24-inch Influent Line
The altitude valve is in poor condition.



Figure 14. NWPS Building Exterior



Figure 15. NWPS Building Exterior
The wall is in poor condition.



Figure 16. NWPS Building Exterior
The wall is in poor condition.



Figure 17. NWPS Piping Inside Building



Figure 18. NWPS Piping Inside Building

Appendix B

Toxic Metal Results NW GST.

Location	Lead PPM	Cadmium PPM	Chromium PPM
NW Tank Manway	153	<2.34	<5.84
NW Tank Interior Steel Piping	199	2.71	11.9
NW Tank Concrete Walls	<2.29	<2.29	<5.72



Customer: KTA-Tator, Inc. (1861)
Address: 115 Technology Drive
Pittsburgh, PA 15275

Order #: 382245

Matrix: Paint
Received: 08/20/20
Reported: 08/25/20

Attn:
Project: Reiss Engineering
Location: Int. of NW Concrete Water Tank
Number: 400222

PO Number: 20PO-371

Sample ID	Cust. Sample ID	Location	Result	RL*	Units	Analysis Date	Analyst
Parameter		Method					
382245-001	KTA 1	Paint Chips Int Manway					
Metals Analysis							
Cadmium		EPA 6010D	<2.34	2.33	mg/kg	08/24/20	DLJ
Chromium		EPA 6010D	<5.84	5.83	mg/kg	08/24/20	DLJ
Lead		EPA 6010D	153	2.33	mg/kg	08/24/20	DLJ
382245-002	KTA 2	Paint Chips Stl Vlvs Int					
Metals Analysis							
Cadmium		EPA 6010D	2.71	2.30	mg/kg	08/24/20	DLJ
Chromium		EPA 6010D	11.9	5.76	mg/kg	08/24/20	DLJ
Lead		EPA 6010D	199	2.30	mg/kg	08/24/20	DLJ
382245-003	KTA 3	Paint Chips Int Lwr Walls					
Metals Analysis							
Cadmium		EPA 6010D	<2.29	2.29	mg/kg	08/24/20	DLJ
Chromium		EPA 6010D	<5.72	5.71	mg/kg	08/24/20	DLJ
Lead		EPA 6010D	<2.29	2.29	mg/kg	08/24/20	DLJ

MS failed for all analytes due to interference, results are accurate and unaffected.

382245-08/25/20 11:47 AM

Reviewed By: **Jennifer Lee**
Manager

All internal QC parameters were met. Unusual sample conditions, if any, are described. Surrogate Spike results designated with "D" indicate that the analyte was diluted out. "MI" indicates matrix interference. Concentration and *Reporting Limit (RL) based on areas provided by client. Values are reported to three significant figures. Solid PPM = mg/kg | PPB = µg/kg and Water PPM = mg/L | PPB = µg/L. The test results reported relate only to the samples submitted.



Customer: KTA-Tator, Inc. (1861)
Address: 115 Technology Drive
Pittsburgh, PA 15275

Order #:	382245
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Matrix Paint
Received 08/20/20
Reported 08/25/20

Attn:
Project: Reiss Engineering
Location: Int. of NW Concrete Water Tank
Number: 400222

PO Number: 20PO-371

Sample ID	Cust. Sample ID	Location	Result	RL*	Units	Analysis Date	Analyst
Parameter		Method					

State Certifications

Method	Parameter	Florida	Virginia
EPA 6010D	Cadmium	ELAP Certified	VELAP Certified
EPA 6010D	Chromium	ELAP Certified	VELAP Certified
EPA 6010D	Lead	ELAP Certified	VELAP Certified

State	Certificate Number
Florida	ELAP E87828
Virginia	VELAP 10779

All internal QC parameters were met. Unusual sample conditions, if any, are described. Surrogate Spike results designated with "D" indicate that the analyte was diluted out. "MI" indicates matrix interference. Concentration and *Reporting Limit (RL) based on areas provided by client. Values are reported to three significant figures. Solid PPM = mg/kg | PPB = µg/kg and Water PPM = mg/L | PPB = µg/L. The test results reported relate only to the samples submitted.