

## **Solicitation 473-11949**

# **2nd Avenue Water Tank Restoration/Water Tower Lights**

**Bid Designation: Public**



**City of Fort Lauderdale**

## Bid 473-11949

### 2nd Avenue Water Tank Restoration/Water Tower Lights

Bid Number 473-11949  
 Bid Title 2nd Avenue Water Tank Restoration/Water Tower Lights

Bid Start Date Jul 7, 2017 8:45:28 PM EDT  
 Bid End Date Aug 3, 2017 2:00:00 PM EDT  
 Question & Answer End Date Jul 26, 2017 5:00:00 PM EDT

Bid Contact Althea Pemsel  
 Sr. Procurement Specialist  
 Finance  
 apemsel@fortlauderdale.gov

Contract Duration 240 days  
 Contract Renewal Not Applicable  
 Prices Good for 120 days  
 Pre-Bid Conference Jul 18, 2017 11:00:00 AM EDT  
 Attendance is optional  
 Location: City of Fort Lauderdale, City Hall  
 Engineering Department, 4th Floor  
 Fort Lauderdale, FL 33301  
 Site Visit to Follow Pre-proposal Meeting

Bid Comments **This project is located at 631 NW 2<sup>nd</sup> Avenue, in the City of Fort Lauderdale. The work to be accomplished under this contract includes, the furnishing of all labor, equipment, and materials for rehabilitation of the city's 1 million gallon steel elevated water storage tank. This project includes procurement, construction, testing, and placing in service, the equipment and materials shown on the Drawings and/or described in the Specifications.**  
**A pre-bid meeting will be held on July 11, 2017, at 11:00 a.m., local, time, at City Hall, 100 N. Andrews Avenue, 4<sup>th</sup> Floor Conference Room, Fort Lauderdale, Florida . After the Pre-bid meeting a site visit immediately follows and will be conducted on site at 631 NW 2nd Avenue, Fort Lauderdale, FL 33311 (Water Tower Site).**  
**The point of contact for this solicitation is Althea Pemsel, MA, CPSM, Senior Procurement Specialist at apemsel@fortlauderdale.gov**

#### Item Response Form

Item 473-11949--01-01 - BASE BID TOTAL: 1. Mobilization and Demobilization  
 Lot Description BASE BID TOTAL  
 Quantity 1 Is  
 Unit Price   
 Delivery Location **City of Fort Lauderdale**  
See ITB Specifications  
 See ITB Specifications  
 Fort Lauderdale FL 33301

Qty 1

**Description**

Payment for mobilization and demobilization will be made at the lump sum price named in the Bid Schedule. Mobilization includes, but is not limited to, bonds, videos, computer, insurance, construction trailers (complete), site cleanup, sanitary facilities, labor associated with permit acquisition, contractors staging area, project signs, testing, project coordination, and demobilization.

Item **473-11949--01-02 - BASE BID TOTAL: 2.Pit Filling**  
 Lot Description **BASE BID TOTAL**  
 Quantity **5 gallon**  
 Unit Price   
 Delivery Location **City of Fort Lauderdale**  
     [See ITB Specifications](#)  
     See ITB Specifications  
     Fort Lauderdale FL 33301  
     **Qty 5**

**Description**

Measurement: Pit Filling and Surfacing will be measured for payment based upon cost per gallon of epoxy compound material as stated in the Bid. Measurement of quantities will be based on field inspections and measurements performed in the presence of the ENGINEER after areas of the tank are abrasive blasted, rough areas are cleaned, and areas are filled. The Engineer shall mark areas requiring pit filling. Areas marked shall be filled with epoxy compound of the type recommended by the coating manufacturer. The epoxy-fairing compound shall be applied neatly and smoothly and rough areas after the repair shall be smoothed prior to coating.

Item **473-11949--01-03 - BASE BID TOTAL: 3.Pit Welding**  
 Lot Description **BASE BID TOTAL**  
 Quantity **50 each**  
 Unit Price   
 Delivery Location **City of Fort Lauderdale**  
     [See ITB Specifications](#)  
     See ITB Specifications  
     Fort Lauderdale FL 33301  
     **Qty 50**

**Description**

Measurement: Pit welding will be measured for payment based upon cost per pit weld repair as stated in the Bid. Measurement of quantities will be based on field inspections performed in the presence of the Engineer after areas of the tank are abrasive blasted, rough areas are cleaned, and welding is completed. The Engineer shall mark areas requiring pit welding.

Item **473-11949--01-04 - BASE BID TOTAL: 4.Seam Welding**  
 Lot Description **BASE BID TOTAL**  
 Quantity **100 Is**  
 Unit Price   
 Delivery Location **City of Fort Lauderdale**  
     [See ITB Specifications](#)  
     See ITB Specifications  
     Fort Lauderdale FL 33301  
     **Qty 100**

**Description**

Measurement: Seam welding will be measured for payment based upon cost per linear foot of 1/4-inch weld as stated in the Bid. Measurement of quantities will be based on field inspections performed in the presence of the Engineer after areas of the tank are abrasive blasted, rough areas are cleaned, and welding is completed. All apparent seam deterioration will be inspected for corrosion

and marked by the Engineer if requiring welding.

Item **473-11949--01-05 - BASE BID TOTAL: 5.Decorative Paint Coat**  
 Lot Description **BASE BID TOTAL**  
 Quantity **1 square foot**  
 Unit Price   
 Delivery Location **City of Fort Lauderdale**  
     [See ITB Specifications](#)  
     See ITB Specifications  
     Fort Lauderdale FL 33301  
     Qty 1

**Description**

Measurement: Decorative Paint Coat will be measured for payment based upon cost per square foot of decorative coating at the thickness as stated in the Bid. Included in this item is the top coat or color coat on the exterior of the water tower including the city name, ladders, light fixture supports, railings and conduit.

Item **473-11949--01-06 - BASE BID TOTAL: 6.Interactive Lighting System**  
 Lot Description **BASE BID TOTAL**  
 Quantity **1 Is**  
 Unit Price   
 Delivery Location **City of Fort Lauderdale**  
     [See ITB Specifications](#)  
     See ITB Specifications  
     Fort Lauderdale FL 33301  
     Qty 1

**Description**

Measurement: Interactive lighting system will be measured for payment based upon lump sum cost - includes furnishing and installing the LED light fixture supports (including priming and painting all but the top coat), the conduit and wire from the lighting control panel to the light fixtures, the light fixtures, conduit and wire from the control panel to the Wi-Fi antenna that controls the lights, Wi-Fi antenna that controls the lights, control panel and contents, conduit and wire to the antenna receiving the camera signal, antenna receiving the signal from the camera and all other accessories necessary to make a complete functioning system in accordance with the plans and specifications.

Item **473-11949--01-07 - BASE BID TOTAL: 7.All Work Described in the Contract Documents**  
 Lot Description **BASE BID TOTAL**  
 Quantity **1 Is**  
 Unit Price   
 Delivery Location **City of Fort Lauderdale**  
     [See ITB Specifications](#)  
     See ITB Specifications  
     Fort Lauderdale FL 33301  
     Qty 1

**Description**

Payment for All Work Described in the Contract Documents will be made at the lump sum price named in the Bid Schedule. Included in this item is the complete furnishing and installation of all general, civil, mechanical, instrumentation, structural, electrical, landscaping, equipment testing, start-up services, and appurtenant work required for a complete and operable system in accordance with the Contract Documents.

**CITY OF FORT LAUDERDALE  
CONTRACT AND SPECIFICATIONS PACKAGE**

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**BID NO. 473-11949**

**PROJECT NO. 11887**

**2<sup>ND</sup> Avenue Water Tank  
Restoration/Water Tower  
Lights**



**Issued on Behalf of: The Public Works Department  
100 North Andrews Avenue  
Fort Lauderdale, Florida 33301**

**Steve Hillberg, P.E.  
Project Manager II**

**Althea Pemsel, MA, CPSM  
Senior Procurement Specialist  
Telephone: (954) 828-5139  
E-mail: [apemsel@fortlauderdale.gov](mailto:apemsel@fortlauderdale.gov)**

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**Note:** The following documents are available electronically for completion and documents must be returned with your bid along with your bid security, proof of insurance, and proof of required licenses/certifications.

- CITB Prime Contractor ID Form
- CITB Questionnaire Sheets
- CITB Trench Safety
- CITB Non-Collusion Statement
- CITB Contract Payment Method
- CITB Construction Bid Certification

**INVITATION TO BID**

Sealed bids will be received electronically until 2:00 P.M., local time, on **August 3, 2017**, and opened immediately thereafter in the 5th Floor Conference Room, City Hall, City of Fort Lauderdale, Florida, 100 North Andrews Avenue, for **BID NO., 473-11949, PROJECT NO., 11887**.

This project consists of Drawing File No. **WS-09-03**;

- **Volume A (31 sheets) and**
- **Volume C (15 sheets).**

This project is located at 631 NW 2<sup>nd</sup> Avenue, in the City of Fort Lauderdale. The work to be accomplished under this contract includes the furnishing of all labor, equipment, and materials for rehabilitation of the city's 1 million gallon steel elevated water storage tank. This project includes procurement, construction, testing, and placing in service, the equipment and materials shown on the Drawings and/or described in the Specifications. In general terms, this project includes the following project elements covered by these Contract Documents:

1. Contain, remove and dispose of existing coatings including lead-based coatings.
2. Remove and dispose of existing ladders, grates, vents and manways.
3. Remove and dispose of the existing lighting fixtures, conduit and wiring.
4. Furnish and install tank interior and exterior coating, including a decorative top coat on the exterior of the entire steel water tower structure.
5. Furnish and install tank accessories including ladders, handrails, grating, vents and manways, FAA lighting fixtures, conduit and wiring.
6. Furnish and install a decorative lighting system including control panel, camera, Wi-Fi antenna, wireless bridge, lighting fixture supports and lighting fixtures.

**NOTE: Payment on this contract will be made by Visa or MasterCard.**

**Possession of a certified general contractor license issued by the Florida Department of Business and Professional Regulation, and preferred Society for Protective Coatings (SSPC) QP1 and QP2 certifications.**

**A pre-bid meeting will be held on July 18, 2017, at 11:00 a.m., local time, at City Hall, 100 N. Andrews Avenue, 4<sup>th</sup> Floor Conference Room, Fort Lauderdale, Florida. After the Pre-bid meeting a site visit immediately follows and will be conducted on site at 631 NW 2nd Avenue, Fort Lauderdale, FL 33311 (Water Tower Site).**

It is strongly suggested that all Contractors attend the pre-proposal conference and/or site visit since tours at other times might not be available.

While attendance is not mandatory, it will be the sole responsibility of the bidder to inspect the City's location(s)/facilities **OR** /and become familiar with the scope of the City's requirements and systems prior to submitting a proposal. No variation in price or conditions shall be permitted based upon a claim of ignorance. It is strongly suggested that all Contractors attend the pre-bid meeting and/or site visit.

Bidding blanks may be obtained **free of charge** at BIDSYNC.COM. Drawing Plans are on file in the Public Works Department, City of Fort Lauderdale at 100 North Andrews Avenue, 4<sup>th</sup> floor, (Monday

thru Friday 8:00 am to 4:30 pm) at a **NON-REFUNDABLE cost of \$25.00 (including sales tax per set)**. Only cash or cashier's check made payable to the City of Fort Lauderdale are accepted.

It will be the sole responsibility of the bidder to ensure that his bid is submitted prior to the bid opening date and time listed. **PAPER BID SUBMITTALS WILL NOT BE ACCEPTED. BIDS MUST BE SUBMITTED ELECTRONICALLY VIA BIDSYNC.COM**

**Bid Security:** A certified check, cashier's check, bank officer's check or bid bond for **FIVE** percent (**5%**) of the bid amount, made payable to the City of Fort Lauderdale, Florida, shall accompany each proposal.

### **Bid Bonds:**

Bidders can submit bid bonds for projects four different ways:

- 1) BidSync allows bidders to submit bid bonds electronically directly through their system using **Surety 2000**. For more information on this feature and to access it, contact BIDSYNC customer care department.
- 2) Bidders may **upload** their original executed bid bond on BIDSYNC to accompany their bids with the electronic proposal, and deliver, upon request, the original, signed and sealed hard copy within five (5) business days after bid opening, with the company name, bid number and title clearly indicated.
- 3) Bidders can **hand deliver** their bid bond in a sealed envelope to the Finance Department/Procurement Services Division, 100 North Andrews Avenue, Room 619, Fort Lauderdale, FL 33301-1016, before time of bid opening, with the company name, bid number and title clearly indicated on the envelope.
- 4) Bidders can **mail** their bid bond to the Finance Department/Procurement Services Division, 100 North Andrews Avenue, Room 619, Fort Lauderdale, FL 33301-1016, before time of bid opening, with the company name, bid number and title clearly indicated on the envelope.

**Certified Checks, Cashier's Checks and Bank Drafts CANNOT** be submitted via BIDSYNC, nor are their images allowed to be uploaded and submitted with your electronic bid. These forms of securities, as well as hard copy bid bonds, must be received on or before the Invitation to Bid (ITB) opening date and time, at the Finance Department/Procurement Services Division, 100 North Andrews Avenue, Room 619, Fort Lauderdale, FL 33301-1016, with the bid number and title clearly indicated on the envelope.

It is the bidder's sole responsibility to ensure that his bid bond or other bid security is received by the Procurement Services Division before time of bid opening. Failure to adhere to this requirement may be grounds to consider the bid as non-responsive.

The City of Fort Lauderdale reserves the right to waive any informality in any or all bids and to reject any or all bids.

For information concerning technical specifications, please utilize the question/answer feature provided by BIDSYNC at [www.bidsync.com](http://www.bidsync.com). Questions of a material nature must be received prior to the cut-off date specified in the solicitation. Material changes, if any, to the scope of services or bidding procedures, will only be transmitted by written addendum. (See addendum section of BIDSYNC Site).

**Contractors please note:** No part of your bid can be submitted via FAX. No variation in price or conditions shall be permitted based upon a claim of ignorance. Submission of a bid will be considered evidence that the Contractor has familiarized himself with the nature and extent of the work, equipment, materials, and labor required. The entire bid response must be submitted in accordance with all specifications contained in this solicitation.

Information on bid results and projects currently out to bid can be obtained on the City's website – <http://www.fortlauderdale.gov/purchasing>. For general inquiries, please call (954) 828-5933.

## **INSTRUCTIONS TO BIDDERS**

The following instructions are given for the purpose of guiding bidders in properly preparing their bids or proposals. These directions have equal force and weight with the specifications and strict compliance is required with all of these provisions.

**QUALIFICATIONS OF BIDDERS** – No proposal will be accepted from, nor will any contract be awarded to, any person who is in arrears to the CITY OF FORT LAUDERDALE, upon any debt or contract, or who has defaulted, as surety or otherwise, upon any obligation to the City, or who is deemed irresponsible or unreliable by the City Commission of Fort Lauderdale.

**PERSONAL INVESTIGATION** - Bidders shall satisfy themselves by personal investigation, and by such other means as they may think necessary or desirable, as to the conditions affecting the proposed work and the cost. No information derived from maps, plans, specifications, or from the Engineer, City Manager, or their assistants shall relieve the Contractor from any risk or from fulfilling all terms of the contract.

**INCONSISTENCIES** – Any seeming inconsistency between different provisions of the plans, specifications, proposal or contract, or any point requiring explanation must be inquired into by the bidder, in writing, at least ten (10) days prior to the time set for opening proposals. After proposals are opened, the bidders shall abide by the decision of the Engineer as to such interpretation.

**ADDENDA AND INTERPRETATIONS** - No interpretations of the meaning of the plans, specifications or other contract documents will be made orally to any bidder. Prospective bidders must request such interpretation in writing as instructed in the bid package. To be considered, such request must be received by the Questions and Answers deadline as indicated in BIDSYNC.COM. Material changes, if any, to the scope of services or bidding procedures will only be transmitted by written addendum. **It is the bidder's responsibility to verify if addendums have been issued in BIDSYNC.COM.** Failure of any bidder to receive any such addenda or interpretation shall not relieve any bidder from any obligation under his bid as submitted. All addenda so issued shall become a part of the contract document. **Bidder** shall verify **in BIDSYNC.COM** that he has all addenda before submitting a bid.

**LEGAL CONDITIONS** - Bidders are notified to familiarize themselves with the provisions of the laws of the State of Florida relating to hours of labor on municipal work, and with the provisions of the laws of the State of Florida and the Charter and the ordinances of the City of Fort Lauderdale.

**PUBLIC ENTITY CRIMES** - 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, Florida Statutes, for CATEGORY TWO for a period of thirty-six (36) months from the date of being placed on the convicted vendor list.

**FORMS OF PROPOSALS** - Each proposal and its accompanying statements must be made on the blanks provided. **THE FORMS MUST BE SUBMITTED ELECTRONICALLY, IN GOOD ORDER WITH ALL BLANKS COMPLETED,** and must show the name of the bidder and a statement as to its contents.

**INSTRUCTIONS TO BIDDERS (continued)**

**FORMS OF PROPOSALS (CONTINUED)** - The proposal must be signed by one duly authorized to do so, and in case signed by a deputy or subordinate, the principal's properly written authority to such deputy or subordinate must accompany the proposal. No proposal will be accepted, for any reason whatsoever, which is not submitted to the City as stated above, within the specified time.

**INSURANCE** - Contractor shall provide and shall require all of its sub-contractors to provide, pay for, and maintain in force at all times during the term of the Agreement, such insurance, including Property Insurance (Builder's Risk), Commercial General Liability Insurance, Business Automobile Liability Insurance, Workers' Compensation Insurance, Employer's Liability Insurance, and Umbrella/Excess Liability, as stated below. Such policy or policies shall be issued by companies authorized to do business in the State of Florida and having agents upon whom service of process may be made in the State of Florida.

**BID BOND** - A certified check, cashier's check or bank officer's check, for the sum set forth in the advertisement, made payable to the City of Fort Lauderdale, Florida, or bid bond in such amount, shall accompany each proposal as evidence of the good faith and responsibility of the bidder. The check or bond shall be retained by the City as liquidated damages should the bidder refuse to or fail to enter into a contract for the execution of the work embraced in this proposal, in the event the proposal of the bidder is accepted. Retention of such amount shall not be construed as a penalty or forfeiture.

The above bond or check shall be a guarantee that the bidder will, if necessary, promptly execute a satisfactory contract and furnish good and sufficient bonds. As soon as a satisfactory contract has been executed and the bonds furnished and accepted, the check or bond accompanying the proposal of the successful bidder will be returned to him. The certified or other checks or bid bonds of the unsuccessful bidders will be returned to them upon the acceptance of the bid of the successful bidder. If the successful bidder shall not enter into, execute, and deliver such a contract and furnish the required bonds within ten (10) days after receiving notice to do so, the certified or other check or bid bond shall immediately become the property of the City of Fort Lauderdale as liquidated damages. Retention of such amount shall not be construed as a penalty or forfeiture.

**FILLING IN BIDS** - All prices must be electronically submitted in the proposal pages, and all proposals must fully cover all items for which proposals are asked and no other. Bidders are required to state the names and places of residence of all persons interested, and if no other person is interested, the bidder shall distinctly state such fact and shall state that the proposal is, in all respects, fair and without collusion or fraud. Where more than one person is interested, it is required that all persons interested or their legal representative make all verification and subscribe to the proposal.

**PRICES QUOTED:** Deduct any discount offered and quote firm net unit prices. In the case of a discrepancy in computing the amount of the bid, the unit price quoted will govern. All prices quoted shall be F.O.B. destination, freight prepaid (Bidder pays and bears freight charges, Bidder owns goods in transit and files any claims), unless otherwise stated in Special Conditions. Each item must be bid separately. No attempt shall be made to tie any item or items contained in the ITB with any other business with the City.

**BIDS FIRM FOR ACCEPTANCE:** Bidder warrants, by virtue of bidding, that his bid and the prices quoted in his bid will be firm for acceptance by the City for a period of one hundred and twenty (120) days from the date of bid opening unless otherwise stated in the ITB. The City shall award contract within this time period or shall request to the recommended awarded vendor an extension to hold pricing, until products/services have been awarded.

**ADDITIONAL ITEMS OR SERVICES:** The City may require additional items or services of a similar nature, but not specifically listed in the contract. The Contractor agrees to provide such items or

services, and shall provide the City prices on such additional items or services. If the price(s) offered are not acceptable to the City, and the situation cannot be resolved to the satisfaction of the City, the City reserves the right to procure those items or services from other vendors, or to cancel the contract upon giving the Contractor thirty (30) days written notice.

DELETION OR MODIFICATION OF SERVICES: The City reserves the right to delete any portion of the Contract at any time without cause, and if such right is exercised by the City, the total fee shall be reduced in the same ratio as the estimated cost of the work deleted bears to the estimated cost of the work originally planned. If work has already been accomplished on the portion of the Contract to be deleted, the Contractor shall be paid for the deleted portion on the basis of the estimated percentage of completion of such portion.

If the Contractor and the City agree on modifications or revisions to the task elements, after the City has approved work to begin on a particular task or project, and a budget has been established for that task or project, the Contractor will submit a revised budget to the City for approval prior to proceeding with the work.

CAUSES FOR REJECTION - No proposal will be canvassed, considered or accepted which, in the opinion of the City Commission, is informal or unbalanced, or contains inadequate or unreasonable prices for any items; each item must carry its own proportion of the cost as nearly as is practicable. Any alteration, erasure, interlineation, or failure to specify bids for all items called for in the schedule shall render the proposal informal.

REJECTION OF BIDS - The City reserves the right to reject any bid if the evidence submitted by the bidder, or if the investigation of such bidder, fails to satisfy the City that such bidder is properly qualified to carry out the obligations and to complete the work contemplated. Any or all proposals will be rejected, if there is reason to believe that collusion exists among bidders. A proposal will be considered irregular and may be rejected, if it shows 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.

BID PROTEST PROCEDURE: Any proposer or bidder who is not recommended for award of a contract and who alleges a failure by the City to follow the City's procurement ordinance or any applicable law may protest to the Procurement Division – Procurement Manager, by delivering a letter of protest within five (5) days after a Notice of Intent to award is posted on the City's website at the following link: [http://www.fortlauderdale.gov/purchasing/notices\\_of\\_intent.htm](http://www.fortlauderdale.gov/purchasing/notices_of_intent.htm). The complete protest ordinance may be found on the City's website at the following link: <http://www.fortlauderdale.gov/purchasing/protestordinance.pdf>

WITHDRAWALS - Any bidder may, without prejudice to himself, withdraw his proposal at any time prior to the expiration of the time during which proposals may be submitted. Such request for withdrawal must be in writing and signed in the same manner and by the same person who signed the proposal. After expiration of the period for receiving proposals, no proposal can be withdrawn, modified, or explained.

CONTRACT - The bidder to whom award is made shall execute a written contract to do the work and maintain the same in good repair until final acceptance by the proper authorities, and shall furnish

good and sufficient bonds as specified within ten (10) days after receiving such contract for execution. If the bidder to whom the first award is made fails to enter into a contract as provided, the award may be annulled and the contract let to the next lowest bidder who is reliable, responsible, and responsive in the opinion of the City Commission, and that bidder shall fulfill every stipulation and obligation as if such bidder were the original party to whom award was made.

The contract shall provide that the Contractor agrees to correct any defective or faulty work or material, which may appear within one (1) year after completion of the work and receipt of final payment.

ENFORCEMENT OF SPECIFICATIONS - Copies of the specifications will be placed in the hands of all the assistants to the Engineer and Inspectors employed on the work, who shall enforce each and every requirement of the contract. Such assistants shall have no authority to vary from such requirements.

COPIES OF DRAWING PLANS - Copies of the drawing plans are on file in the Public Works Department, City Hall, 4<sup>th</sup> Floor, 100 N. Andrews Avenue, Fort Lauderdale, Florida 33301.

SURETY BOND – The Contractor shall execute and record in the public records of Broward County, Florida, a payment and performance bond in an amount at least equal to the Contract Price with a surety insurer authorized to do business in the State of Florida as surety, (“Bond”), in accordance with Section 255.05, Florida Statutes (2014), as may be amended or revised, as security for the faithful performance and payment of all of the Contractor’s obligations under the Contract Documents.

The successful bidder shall furnish a performance and payment bond in compliance with Section 255.05, Florida Statutes, written by a Corporate Surety company, holding a Certificate of Authority from the Secretary of the Treasury of the United States as acceptable sureties on federal bonds, in an amount equal to the total amount payable by the terms of the contract, executed and issued by a Resident Agent licensed by and having an office in the State of Florida, representing such Corporate Surety, conditioned for the due and faithful performance of the work, and providing in addition to all other conditions, that if the Contractor, or his or its subcontractors, fail to duly pay for any labor, materials, or other supplies used or consumed by such Contractor, or his or its subcontractor or subcontractors, in performance of the work contracted to be done, the Surety will pay the same in the amount not exceeding the sum provided in such bonds, together with interest at the rate of fifteen percent (15%) per annum, and that they shall indemnify and save harmless the City of Fort Lauderdale to the extent of any and all payments in connection with carrying out of the contract, which the City may be required to make under the law.

The Contractor is required at all times to have a valid surety bond in force covering the work being performed. A failure to have such bond in force at any time shall constitute a default on the part of the Contractor. A bond written by a surety, which becomes disqualified to do business in the State of Florida, shall automatically constitute a failure on the part of the Contractor to meet the above requirements.

Such bond shall continue in effect for one (1) year after completion and acceptance of the work with liability equal to at least twenty-five percent (25%) of contract price, or an additional bond shall be conditioned that the Contractor will correct any defective or faulty work or material which appear within one (1) year after completion of the contract, upon notification by the City, except in contracts which are concerned solely with demolition work, in which cases twenty-five percent (25%) liability will not be applicable.

AUDIT OF CONTRACTOR’S RECORDS - Upon execution of the Contract, the City reserves the right to conduct any necessary audit of the Contractor’s records. Such an audit, or audits, may be conducted by the City or its representatives at any time prior to final payment, or thereafter, for a

period up to three (3) years. The City may also require submittal of the records from either the Contractor, the Subcontractor, or both. For the purpose of this Section, records shall include all books of account, supporting documents and papers deemed necessary by the City to assure compliance with the contract provisions.

Failure of the Contractor or Subcontractor to comply with these requirements may result in disqualification or suspension from bidding for future contracts or disapproval as a Subcontractor at the option of the City.

The Contractor shall assure that each of its Subcontractors will provide access to its records pertaining to the project upon request by the City.

PERIODIC ESTIMATE FOR PARTIAL PAYMENT - After the Contractor has submitted a periodic estimate for partial payment, approved and certified by the Public Works Department, the City shall make payment in the manner provided in the Contract Documents and in accordance with Florida's Prompt Payment Act, Section 218, Florida Statutes.

RESERVATION FOR AWARD AND REJECTION OF BIDS - The City reserves the right to accept or reject any or all bids, part of bids, and to waive minor irregularities or variations to specifications contained in bids, and minor irregularities in the bidding process. The City also reserves the right to award the contract on a split order basis, lump sum basis, individual item basis, or such combination as shall best serve the interest of the City. The City reserves the right to make an award to the responsive and responsible bidder whose product or service meets the terms, conditions, and specifications of the ITB and whose bid is considered to best serve the City's interest. In determining the responsiveness of the offer and the responsibility of the Bidder, the following shall be considered when applicable: the ability, capacity and skill of the Bidder to perform as required; whether the Bidder can perform promptly, or within the time specified, without delay or interference; the character, integrity, reputation, judgment, experience and efficiency of the Bidder; the quality of past performance by the Bidder; the previous and existing compliance by the Bidder with related laws and ordinances; the sufficiency of the Bidder's financial resources; the availability, quality and adaptability of the Bidder's supplies or services to the required use; the ability of the Bidder to provide future maintenance, service or parts; the number and scope of conditions attached to the bid.

MINORITY AND WOMEN BUSINESS ENTERPRISE PARTICIPATION AND BUSINESS - It is the desire of the City of Fort Lauderdale to increase the participation of minority (MBE) and women-owned (WBE) businesses in its contracting and procurement programs. While the City does not have any preference or set aside programs in place, it is committed **to a policy of equitable participation for these firms**. The City of Fort Lauderdale wants to increase the participation of Minority Business Enterprises (MBE), Women Business Enterprises (WBE), and Small Business Enterprises (SBE) in its procurement activities. If your firm qualifies in accordance with the below definitions please indicate in the space provided in this ITB.

Minority Business Enterprise (MBE) "A Minority Business" is a business enterprise that is owned or controlled by one or more socially or economically disadvantaged persons. Such disadvantage may arise from cultural, racial, chronic economic circumstances or background or other similar cause. Such persons include, but are not limited to: Blacks, Hispanics, Asian Americans, and Native Americans.

The term "Minority Business Enterprise" means a business at least fifty-one percent (51%) of which is owned by minority group members or, in the case of a publicly owned business, at least fifty-one percent (51%) of the stock of which is owned by minority group members. For the purpose of the preceding sentence, minority group members are citizens of the United States who include, but are not limited to: Blacks, Hispanics, Asian Americans, and Native Americans.

Women Business Enterprise (WBE) a "Women Owned or Controlled Business" is a business enterprise at least fifty-one percent (51%) of which is owned by females or, in the case of a publicly owned business, at least fifty-one percent (51%) of the stock of which is owned by females.

Small Business Enterprise (SBE) "Small Business" means a corporation, partnership, sole proprietorship, or other legal entity formed for the purpose of making a profit, which is independently owned and operated, has either fewer than 100 employees or less than \$1,000,000 in annual gross receipts.

BLACK includes persons having origins in any of the Black racial groups of Africa.

WHITE includes persons whose origins are Anglo-Saxon and Europeans and persons of Indo-European decent including Pakistani and East Indian.

HISPANIC includes persons of Mexican, Puerto Rican, Cuban, Central and South American, or other Spanish culture or origin, regardless of race.

NATIVE AMERICAN includes persons whose origins are American Indians, Eskimos, Aleuts, or Native Hawaiians.

ASIAN AMERICAN includes persons having origin in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands.

DEBARRED OR SUSPENDED BIDDERS OR PROPOSERS - The bidder or proposer certifies, by submission of a response to this solicitation, that neither it nor its principals and subcontractors are presently debarred or suspended by any Federal department or agency.

LOBBYING ACTIVITIES - ALL CONTRACTORS PLEASE NOTE: Any contractor submitting a response to this solicitation must comply, if applicable, with City of Fort Lauderdale Ordinance No. C-00-27 & Resolution No. 07-101, Lobbying Activities. Copies of Ordinance No., C-00-27, and Resolution No. 07-101, may be obtained from the City Clerk's Office on the 7th Floor of City Hall, 100 N. Andrews Avenue, Fort Lauderdale, Florida. The ordinance may also be viewed on the City's website at [http://www.fortlauderdale.gov/clerk/LobbyistDocs/lobbyist\\_ordinance.pdf](http://www.fortlauderdale.gov/clerk/LobbyistDocs/lobbyist_ordinance.pdf) .

## SPECIAL CONDITIONS

### 01. PURPOSE

The City of Fort Lauderdale, Florida (City) is seeking bids from qualified bidders, hereinafter referred to as the Contractor, to provide restoration services for the City's Public Works Department, in accordance with the terms, conditions, and specifications contained in this Invitation to Bid (ITB).

### 02. TRANSACTION FEES

The City of Fort Lauderdale uses BidSync ([www.bidsync.com](http://www.bidsync.com)) to distribute and receive bids and proposals. There is no charge to vendors/contractors to register and participate in the solicitation process, nor will any fees be charged to the awarded contractor.

### 03. SUBMISSION OF BIDS

It is the sole responsibility of the Contractor to ensure that their bid is submitted electronically through BidSync at [www.bidsync.com](http://www.bidsync.com) and that any bid security not submitted via BidSync reaches the City of Fort Lauderdale City Hall, Procurement Services Division, 6<sup>th</sup> floor, Room 619, 100 N. Andrews Avenue, Fort Lauderdale, FL 33301 in a sealed envelope marked on the outside with the ITB solicitation number and Contractor's name, no later than the time and date specified in this solicitation. **PAPER BID SUBMITALS WILL NOT BE ACCEPTED. PLEASE SUBMIT YOUR BID RESPONSE ELECTRONICALLY.**

### 04. INFORMATION OR CLARIFICATION

For information concerning procedures for responding to this solicitation, contact **Althea Pemsel, MA, CPSM, Senior Procurement Specialist** via at Email [apemsel@fortlauderdale.gov](mailto:apemsel@fortlauderdale.gov). Such contact shall be for clarification purposes only.

For information concerning technical specifications please utilize the question/answer feature provided by BidSync at [www.bidsync.com](http://www.bidsync.com). Questions of a material nature must be received prior to the cut-off date specified in the solicitation. Material changes, if any, to the scope of services or bidding procedures will only be transmitted by written addendum. (See addendum section of BidSync Site). **Contractors please note:** No part of your bid can be submitted via FAX. No variation in price or conditions shall be permitted based upon a claim of ignorance. Submission of a bid will be considered evidence that the Contractor has familiarized himself with the nature and extent of the work, and the equipment, materials, and labor required. The entire bid response must be submitted in accordance with all specifications contained in this solicitation. The questions and answers submitted in BidSync shall become part of any contract that is created from this ITB.

### 05. CONTRACT TIME

- 5.1 The Contractor recognizes that TIME IS OF THE ESSENCE. The Work shall commence within 30 calendar days of the date of the Notice to Proceed.
- 5.2 The Work shall be Substantially Completed within 210 calendar days after the date when the Contract Time commences to run as provided in the Notice to Proceed.

- 5.3 The Work shall be finally completed on the Final Completion Date and ready for final payment in accordance with this Agreement within 240 calendar days after the date when the Contract Time commences to run as provided in the Notice to Proceed.

The City of Fort Lauderdale reserves the right to waive any informality in any bid and to reject any or all bids. The City of Fort Lauderdale reserves the right to reduce or delete any of the bid items.

**At time of award of contract, the City reserves the right to set a maximum dollar limit that may be expended on this project. Contract quantities of any or all items may be increased, reduced, or eliminated to adjust the contract amount to coincide with the amount of work necessary or to bring the contract value to within the established limit. All quantities are estimated and the City reserves the right to increase, reduce, or eliminate the contract quantities in any amount.**

**The undersigned bidder affirms that he has or will obtain all equipment necessary to complete the work described, that he has or will obtain all required permits and licenses from the appropriate agencies, and that his firm is authorized to do business in the State of Florida.**

**06. BID SECURITY**

A certified check, cashier's check, bank officer's check or bid bond for **Five** percent **(5%)** of the bid amount, made payable to the City of Fort Lauderdale, Florida, shall accompany each proposal.

**07. REQUIRED LICENSES/CERTIFICATIONS**

Contractor must possess the following licenses/certifications to be considered for award. Certified General Contractor's License and preferred is Society for Protective Coatings (SSPC) QP1 and QP2 Certification.

**Note: Contractor must have proper licensing and be able to provide evidence of same, if requested, at time of award.**

**08. SPECIFIC EXPERIENCE REQUIRED**

The following expertise is required to be considered for this contract. Specific references attesting to this expertise must be submitted with bid.

Contractor and Subcontractors shall each have a minimum of 5-years' experience constructing or repairing steel elevated storage tanks of similar size. The contractor must submit a minimum of three (3) specific public project references for the similar elevated storage tanks which have been completed in the last 5 years. Successful completion of the projects is required as well as good references for consideration of performing this project. For each project listed; identify the location, dates of construction, project names and overall scope, the scope of work that was self-performed by Contractor, and Client's name, address, phone number, and email address. In addition, the referenced employees as submitted by the contractor are required to be on site through the project construction.

**REFERENCES SHOULD NOT INCLUDE CITY OF FORT LAUDERDALE EMPLOYEES OR WORK PERFORMED FOR THE CITY.**

***By signing this bid solicitation, contractor is affirming that this expertise will be provided for this contract at no additional charge.***

**09. BID ALLOWANCE**

**Allowance for permits:** Payments will be made to the contractor based on the actual cost of permits upon submission of paid permit receipts. The City shall not pay for other costs related to obtaining or securing permits.

The amount indicated is intended to be sufficient to cover the entire project. If the City Permit fees exceed the allowance indicated, the City will reimburse the contractor the actual amount of City Permit Fees required for project completion.

Allowance	\$
Allowance for Special Building Inspector	\$50,000
<b>TOTAL</b>	<b>\$50,000</b>

**Note: The City will add this allowance to your bid.**

**10. INSURANCE REQUIREMENTS** (See Article 10, Bonds and Insurance, of the Contract for details)  
Insurance

10.1 Contractor shall provide and shall require all of its sub-contractors to provide, pay for, and maintain in force at all times during the term of the Agreement, such insurance, including Property Insurance (Builder’s Risk), Commercial General Liability Insurance, Business Automobile Liability Insurance, Workers’ Compensation Insurance, Employer’s Liability Insurance, and Umbrella/Excess Liability, as stated below, as well as Professional Liability insurance in the amount of \$1,000,000 for any Architectural and/or Engineering requirements associated with the fulfillment of the contract if required. Such policy or policies shall be issued by companies authorized to do business in the State of Florida and having agents upon whom service of process may be made in the State of Florida. **A Sample Insurance Certificate shall be included with the proposal to demonstrate the firm’s ability to comply with insurance requirements. Provide a previous certificate or other evidence listing the insurance companies’ names for all required coverage, and the dollar amounts of the coverage.**

A. The City is required to be named as additional insured on the Commercial General Liability insurance policy. BINDERS ARE UNACCEPTABLE. The insurance coverage required shall include those classifications, as listed in standard liability insurance manuals, which most nearly reflect the operations of the Contractor. Any exclusions or provisions in the insurance maintained by the Contractor that precludes coverage for the work contemplated in this Agreement shall be deemed unacceptable, and shall be considered a breach of contract.

B. The Contractor shall provide the City an original Certificate of Insurance for policies required by Article 10. All certificates shall state that the City shall be given ten (10) days’ notice prior to expiration or cancellation of the policy. The insurance provided shall be endorsed or amended to comply with this notice requirement. In the event that the insurer is unable to accommodate, it shall be the responsibility of the Contractor to provide the proper notice. Such notification will be in writing by registered mail, return receipt requested and addressed to the Finance Department. Such policies shall: (1) name the insurance company or companies affording coverage acceptable to the City, (2) state the effective and expiration dates of the policies, (3) include special

endorsements where necessary. Such policies provided under Article 10 shall not be affected by any other policy of insurance, which the City may carry in its own name.

- C. Contractor shall as a condition precedent of this Agreement, furnish to the City of Fort Lauderdale, c/o Project Manager, 100 N. Andrews Avenue, Fort Lauderdale, FL 33301, Certificate(s) of Insurance upon execution of this Agreement, which indicate that insurance coverage has been obtained which meets the requirements as outlined below:

10.2 Property Insurance (Builder's Risk): The Contractor shall purchase and maintain property insurance upon the Work at or off the site of 100% of the contract completed value. These policies shall insure the interest of the owner, contractor and subcontractors in the Work, and shall insure against "all risks" of physical loss and damage including theft, vandalism and malicious mischief, collapse and water damage. All such insurance required by this paragraph shall remain in effect until the Work is completed and accepted by the City.

10.3 Commercial General Liability

- A. Limits of Liability:
- |   |             |
|---|-------------|
| Bodily Injury and Property Damage - Combined Single Limit |             |
| Each Occurrence   | \$1,000,000 |
| Project Aggregate   | \$1,000,000 |
| General Aggregate   | \$2,000,000 |
| Personal Injury   | \$1,000,000 |
| Products/Completed Operations                             | \$1,000,000 |
- B. Endorsements Required:
- City of Fort Lauderdale included as an Additional Insured
  - Broad Form Contractual Liability
  - Waiver of Subrogation
  - Premises/Operations
  - Products/Completed Operations
  - Independent Contractors
  - Owners and Contractors Protective Liability
  - Contractor's Pollution Liability

10.4 Business Automobile Liability

- A. Limits of Liability:
- |   |             |
|---|-------------|
| Bodily Injury and Property Damage - Combined Single Limit |             |
| All Autos used in completing the contract                 |             |
| Including Hired, Borrowed or Non-Owned Autos              |             |
| Any One Accident  | \$1,000,000 |
- B. Endorsements Required:
- Waiver of Subrogation

10.5 Workers' Compensation and Employer's Liability Insurance

Limits: Workers' Compensation – Per Florida Statute 440  
Employers' Liability - \$500,000

Any firm performing work on behalf of the City of Fort Lauderdale must provide Workers' Compensation insurance. Exceptions and exemptions can only be made if they are in accordance with Florida Law.

Contractor must be in compliance with all applicable State and Federal workers' compensation laws, including the U.S. Longshore Harbor Workers' Act or Jones Act.

10.6 Umbrella/Excess Liability: The Contractor shall provide umbrella/excess coverage with limits of no less than \$2,000,000 excess of Commercial General Liability, Automobile Liability and Employer's Liability.

10.7 All insurance policies required above shall be issued by companies authorized to do business under the laws of the State of Florida, with the following qualifications:

The Contractor's insurance must be provided by an A.M. Best's "A-" rated or better insurance company authorized to issue insurance policies in the State of Florida, subject to approval by the City's Risk Manager. Any exclusions or provisions in the insurance maintained by the Contractor that precludes coverage for work contemplated in this project shall be deemed unacceptable, and shall be considered breach of contract.

**NOTE: CITY PROJECT NUMBER MUST APPEAR ON EACH CERTIFICATE.**

**A Sample Insurance Certificate shall be included with the proposal to demonstrate the firm's ability to comply with insurance requirements. Provide a previous certificate or other evidence listing the insurance companies' names for all required coverage, and the dollar amounts of the coverage.**

Compliance with the foregoing requirements shall not relieve the Contractor of their liability and obligation under this section or under any other section of this Agreement.

The Contractor shall be responsible for assuring that the insurance certificates required in conjunction with this Section remain in force for the duration of the Project. If insurance certificates are scheduled to expire during the contractual period, the Contractor shall be responsible for submitting new or renewed insurance certificates to the City at a minimum of thirty (30) calendar days in advance of such expiration. In the event that expired certificates are not replaced with new or renewed certificates that cover the contractual period, the City shall:

- a) Suspend the Agreement until such time as the new or renewed certificates are received by the City.
- b) The City may, at its sole discretion, terminate the Agreement for cause and seek damages from the Contractor in conjunction with the violation of the terms and conditions of the Agreement.

**11. PERFORMANCE AND PAYMENT BOND:** \_\_\_\_\_ 100%  
**Number of awards anticipated:**  1

**12. CITY PROJECT MANAGER**

The Project Manager is hereby designated by the City as Steve Hillberg, P.E., whose address is 100 North Andrews, 4<sup>th</sup> Floor, Fort Lauderdale, FL 33301, whose email address is [shillberg@fortlauderdale.gov](mailto:shillberg@fortlauderdale.gov). The Project Manager will assume all duties and responsibilities and will have the rights and authorities assigned to the Project Manager in the Contract Documents in connection with completion of the Work in accordance with this Agreement.

**13. LIQUIDATED DAMAGES** *(See Article 16, Liquidated Damages, of the Contract for details)*

Upon failure of the Contractor to complete the Work within the time specified for completion, the Contractor shall pay to the City the sum of **Five Hundred Dollars (\$500.00)** for each and every calendar day that the completion of the Work is delayed beyond the time specified in this Agreement for completion, as fixed and agreed liquidated damages and not as a penalty, so long as the delay is caused by the Contractor. (See Article 16, Liquidated Damages Clause, of the Contract)

**14. PAYMENT** *(See Article 7, Payment, of the Contract for other details)*

The City has implemented a Purchasing Card (P-Card) Program utilizing both VISA and MASTERCARD networks. Purchases from this contract will be made utilizing the City's Purchasing Card. Contractor will receive payment from the purchasing card in the same manner as other credit card purchases. Accordingly, bidders must presently have the ability to accept these credit cards or take whatever steps necessary to implement the ability before the start of the contract term, or contract award by the City. The City reserves the right to revise this program as necessary.

**15. WORK SCHEDULE (including overtime hours):**

Regular work hours: **8:00 am to 5:00 pm, Monday through Friday.**  
City Inspector Hours: **8:00 am to 4:30 pm, Monday through Friday.**

Any inspection requested by the contractor outside those hours will be considered overtime to be paid by the Contractor.

**16. INSPECTION OVERTIME COST: \$219.00****17. SUBSTANTIAL COMPLETION:**

Substantial Completion shall mean the date certified by the CITY, through issuance of a letter granting Substantial Completion, when construction is sufficiently complete, in accordance with the Contract Documents, so the CITY can occupy or utilize the work (or portion thereof) for the use for which it is intended. Substantial Completion shall also include the following:

- A. Complete installation, testing and acceptance, by the CITY, of work described in contract documents.
- B. Operation and maintenance manual submittals received and accepted by the CITY.
- C. Record drawing redlines received and accepted by the CITY.
- D. Delivery and acceptance by the CITY of all spare parts and special tools required by the Contract Documents.

CITY OF FORT LAUDERDALE  
CONSTRUCTION AGREEMENT

THIS AGREEMENT made and entered into this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, by and between the City of Fort Lauderdale, a Florida municipal corporation (City) and \_\_\_\_\_, (Contractor), (parties);

WHEREAS, the City desires to retain a contractor for the Project as expressed in its Invitation to Bid No., \_\_\_\_\_, Project Number, \_\_\_\_\_, which was opened on \_\_\_\_\_; and,

WHEREAS, the Contractor has expressed its willingness and capability to perform the necessary work to accomplish the Project.

NOW, THEREFORE, the City and the Contractor, in consideration of the mutual covenants and conditions contained herein and for other good and valuable consideration, the receipt and sufficiency is hereby acknowledged, agree as follows:

**ARTICLE 1 – DEFINITIONS**

Whenever used in this Agreement or in other Contract Documents, the following terms have the meanings indicated which are applicable to both the singular and plural forms:

- 1.1 Agreement – This written Agreement between the City and the Contractor covering the work to be performed including other Contract Documents that are attached to or incorporated in the Agreement.
- 1.2 Application for Payment – The form accepted by the City which is to be used by the Contractor in requesting progress or final payment and which is to include such supporting documentation as is required by the Contract Documents
- 1.3 Approve – The word approve is defined to mean review of the material, equipment or methods for general compliance with design concepts and with the information given in the Contract Documents. It does not imply a responsibility on the part of the City to verify in every detail conformance with plans and specifications.
- 1.4 Bid – The offer or Bid of the Contractor submitted on the prescribed form setting forth the total prices for the Work to be performed.
- 1.5 Bid Documents – This Agreement, advertisement for Invitation to Bids, the Instructions to Bidders, the Bid Form (with supplemental affidavits and agreements), the Contract Forms, General Conditions, the Supplementary Conditions, the Specifications, and the Plans, which documents all become an integral part of the Contract Documents.
- 1.6 Certificate of Substantial Completion - Certificate provided by the City certifying that all Work, excluding the punch list items, has been completed, inspected, and accepted by the City.

- 1.7 Change Order - A change order is defined as a written order to a contractor approved by the City, authorizing a revision of an underlying agreement between the City and a contractor that is directly related to the original scope of work or an adjustment in the original contract price or the contract time directly related to the original scope of work, issued on or after the effective date of the contract.
- 1.8 City – The City of Fort Lauderdale, Florida, including but not limited to its employees, agents, officials, representatives, contractors, subcontractors, volunteers, successors and assigns, with whom the Contractor has entered into the Agreement and for whom the Work is to be provided.
- 1.9 Contract Documents – The Contract Documents shall consist of this Agreement, Exhibits to this Agreement, Public Construction Bond, Performance Bond, Payment Bond and Certificates of Insurance, Notice of Award and Notice to Proceed, General Conditions as amended by the Special Conditions, Technical Specifications, Plans/Drawings, Addenda, Bid Form and supplement Affidavits and Agreements, all applicable provisions of State and Federal Law and any modification, including Change Orders or written amendments duly delivered after execution of Agreement, Invitation to Bid, Instructions to Bidders and Bid Bond, Contractor's response to the City's Invitation to Bid, Schedule of Completion, Schedule of Values, all amendments, modifications and supplements, change orders and work directive changes issued on or after the Effective Date of the Agreement, as well as any additional documents that are required to be submitted under the Agreement.
- Permits on file with the City and or those permits to be obtained shall be considered directive in nature and will be considered a part of this Agreement. A copy of all permits shall be given to the City for inclusion in the Contract Documents. Terms of permits shall be met prior to acceptance of the Work and release of the final payment.
- 1.10 Contract Price – The monies payable to the Contractor by the City under the Contract Documents and in accordance with the line item unit prices listed in the Bid.
- 1.11 Contract Time – The number of calendar days stated in the Agreement for the completion of the Work. The dates on which the work shall be started and shall be completed as stated in the Notice to Proceed.
- 1.12 Contractor – The person, firm, company, or corporation with whom the City has entered into the Agreement, including but not limited to its employees, agents, representatives, contractors, subcontractors, their subcontractors and their other successors and assigns.
- 1.13 Day – A calendar day of twenty-four (24) hours ending at midnight.
- 1.14 Defective – An adjective which when modifying the word "Work" refers to work that is unsatisfactory, faulty, or deficient, or does not conform to the Contract Documents or does not meet the requirements of any inspection, test or approval referred to in the Contract Documents, or has been damaged prior to the Project Manager's recommendation of final payment.

- 1.15 Effective Date of the Agreement – The effective date of the agreement shall be the date the City Commission approves the work. The contractor shall provide all required payment and performance bonds and insurances to the City within ten (10) Calendar days following the City Commission approval. Upon verification of all bonds and insurances, the City will issue a notice to proceed (NTP) to the Contractor. Contract time will commence on the date when the Notice to Proceed is issued. The Contractor shall commence the work immediately upon receipt of the Notice to Proceed. Failure of the contractor to proceed with the work will constitute non-performance of the Contractor and would be ground for termination of the contract per ARTICLE 17 of the Agreement.
- 1.16 Final Completion Date – The date the Work is completed, including completion of the final punch list, and delivered along with those items specified in the Contract Documents and is accepted by the City.
- 1.17 Hazardous Materials (HAZMAT) - Any solid, liquid, or gaseous material that is toxic, flammable, radioactive, corrosive, chemically reactive, or unstable upon prolonged storage in quantities that could pose a threat to life, property, or the environment defined in Section 101(14) of Comprehensive Environmental Response, Compensation and Liability Act of 1980 and in 40 CFR 300.6. Also defined by 49 CFR 171.8 as a substance or material designated by the Secretary of Transportation to be capable of posing an unreasonable risk to health, safety, and property when transported in commerce and which has been so designated.
- 1.18 Hazardous Substance - As defined by Section 101(14) of the Comprehensive Environmental Response, Compensation and Liability Act; any substance designated pursuant to Section 311(b) (2) (A) of the Clean Water Act; any element, compound, mixture, solution or substance designated pursuant to Section 102 identified under or listed pursuant to Section 3001 of the Solid Waste Disposal Act {but not including any waste listed under Section 307[a] of the Clean Water Act}; any hazardous air pollutant listed under Section 112 of the Clean Air Act; and any imminently hazardous chemical substance or mixture pursuant to Section 7 of the Toxic Substances Control Act. The term does not include petroleum, including crude oil or any fraction thereof, which is not otherwise specifically listed or designated as a hazardous substance in the first sentence of this paragraph, and the term does not include natural gas, natural gas liquids, liquefied natural gas, or synthetic gas usable for fuel (or mixtures of natural gas and such synthetic gas).
- 1.19 Hazardous Waste - Those solid wastes designated by OSHA in accordance with 40 CFR 261 due to the properties of ignitability, corrosivity, reactivity, or toxicity. Any material that is subject to the Hazardous Waste Manifest requirements of the EPA specified in 40 CFR Part 262.
- 1.20 Holidays - Those designated non-work days as established by the City Commission of the City of Fort Lauderdale.
- 1.21 Inspection – The term “inspection” and the act of inspecting as used in this Agreement is defined to mean the examination of construction to ensure that it conforms to the design concept expressed in the plans and specifications. This term shall not be construed to mean supervision, superintending and/or overseeing.

- 1.22 Notice of Award - The written notice by City to the Contractor stating that upon compliance by the Contractor with the conditions precedent enumerated therein, within the time specified that the City will sign and deliver this Agreement.
- 1.23 Notice to Proceed – A written notice given by the City to the Contractor fixing the date on which the Contract Time will commence to run and on which the Contract Time will end.
- 1.24 Plans - The drawings which show the character and scope of the work to be performed and which have been prepared or approved by the City and are referred to in the Contract Documents.
- 1.25 Premises (otherwise known as Site or Work Site) – means the land, buildings, facilities, etc. upon which the Work is to be performed.
- 1.26 Project – The total construction of the Work to be provided as defined in the Contract Documents.
- 1.27 Project Manager - The employee of the City, or other designated individual who is herein referred to as the Project Manager, will assume all duties and responsibilities and will have the rights and authorities assigned to the Project Manager in the contract Documents in connection with completion of the Work in accordance with this Agreement. The Project Manager, or designee, shall be the authorized agent for the City unless otherwise specified.
- 1.28 Punch List - The City's list of Work yet to be done or be corrected by the Contractor, before the Final Completion date can be determined by the City.
- 1.29 Record Documents - A complete set of all specifications, drawings, addenda, modifications, shop drawings, submittals and samples annotated to show all changes made during the construction process.
- 1.30 Record Drawings or "As-Builts" - A set of drawings which show significant changes in the work made during construction and which are usually based on drawings marked up in the field and other data furnished by the contractor. These documents will be signed and sealed by the Engineer of Record or a Professional Land Surveyor licensed in the State of Florida.
- 1.31 Substantially Completed Date – A date when the Contractor has requested in writing, stating that the Work is substantially completed and is ready for an inspection and issuance of a final punch list for the Project.
- 1.32 Work – The entire completed delivered product or the various separately identifiable parts thereof required to be furnished under the Contract Documents. Work is the result of performing services, furnishing labor and furnishing and incorporating material and equipment into the product, all as required by the Contract Documents.

## ARTICLE 2 – SCOPE OF WORK

- 2.1 The Contractor shall complete all work as specified or indicated in the Contract Documents. The Project for which the Work under the Contract Documents may be the whole or only part is generally described as follows:

**2<sup>nd</sup> Avenue Tank Restoration/Water Tower Lights**  
ITB # 473-11949 PROJECT #11887

- 2.2 All Work for the Project shall be constructed in accordance with the Drawings and Specifications. The Work generally involves:

### PROJECT DESCRIPTION

This project is located at 631 NW 2nd Avenue, in the City of Fort Lauderdale. The work to be accomplished under this contract includes, the furnishing of all labor, equipment, and materials for rehabilitation of the city's 1 million gallon steel elevated water storage tank. This project includes procurement, construction, testing, and placing in service, the equipment and materials shown on the Drawings and/or described in the Specifications.

- 2.3 Within ten (10) days of the execution of this Agreement, the Contractor shall submit a Construction Schedule, Schedule of Values and a listing of those subcontractors that will be utilized by the Contractor. The general sequence of the work shall be submitted by the Contractor and approved by the City before any work commences. The City reserves the right to issue construction directives necessary to facilitate the Work or to minimize any conflict with operations.

## ARTICLE 3 – PROJECT MANAGER

- 3.1 The Project Manager is hereby designated by the City as Steve Hillberg, P.E., whose address is 100 North Andrews, 4th Floor, Fort Lauderdale, FL 33301, telephone number 954 828 5076 whose email address is shillberg@fortlauderdale.gov. The Project Manager will assume all duties and responsibilities and will have the rights and authorities assigned to the Project Manager in the Contract Documents in connection with completion of the Work in accordance with this Agreement.

## ARTICLE 4 – CONTRACT DOCUMENTS

The Contract Documents which comprise the entire Agreement between the City and Contractor are attached to this Agreement, are made a part hereof and consist of the following:

- 4.1 This Agreement.
- 4.2 The Contract Documents may only be altered, amended, or repealed in accordance with the specific provisions of the terms of this Agreement.
- 4.3 Exhibits to this Agreement: (Plans sheets [ ] to [ ] inclusive).

- 4.4 Public Construction Bond, Performance Bond, Payment Bond and Certificates of Insurance.
- 4.5 Notice of Award and Notice to Proceed.
- 4.6 General Conditions as amended by the Special Conditions.
- 4.7 Technical Specifications.
- 4.8 Plans/Drawings.
- 4.9 Addenda number \_\_\_\_\_ through \_\_\_\_\_, inclusive.
- 4.10 Bid Form and supplement Affidavits and Agreements.
- 4.11 All applicable provisions of State and Federal Law.
- 4.12 Invitation to Bid No., \_\_\_\_\_, Instructions to Bidders, and Bid Bond.
- 4.13 Contractor's response to the City's Invitation to Bid No., \_\_\_\_\_, dated \_\_\_\_\_.
- 4.14 Schedule of Completion and Schedule of Values.
- 4.15 All amendments, modifications and supplements, change orders and work directive changes issued on or after the Effective Date of the Agreement.
- 4.16 Any additional documents that are required to be submitted under the Agreement.
- 4.17 Permits on file with the City and or those permits to be obtained shall be considered directive in nature and will be considered a part of this Agreement. A copy of all permits shall be given to the City for inclusion in the Contract Documents. Terms of permits shall be met prior to acceptance of the Work and release of the final payment.

In the event of any conflict between the documents or any ambiguity or missing specification or instruction, the following priority is established:

- a. Specific direction from the City Manager (or designee).
- b. Approved change orders, addenda or amendments.
- c. Specifications (quality) and Drawings (location and quantity).
- d. Supplemental conditions or special terms.
- e. General Terms and Conditions.
- f. This Agreement dated \_\_\_\_\_ and any attachments.

- g. Invitation to Bid No., \_\_\_\_\_, and the specifications prepared by the City.
- h. Contractor's response to the City's Invitation to Bid No., \_\_\_\_\_, dated \_\_\_\_\_.
- i. Schedule of Values.
- j. Schedule of Completion.

If during the performance of the Work, Contractor finds a conflict, error or discrepancy in the Contract Documents, Contractor shall so report to the Project Manager, in writing, at once and before proceeding with the Work affected shall obtain a written interpretation or clarification from the City.

It is the intent of the specifications and plans to describe a complete Project to be constructed in accordance with the Contract Documents. Any Work that may reasonably be inferred from the specifications or plans as being required to produce the intended result shall be supplied whether or not it is specifically called for. When words which have a well-known technical or trade meaning are used to describe Work, materials, or equipment, such works shall be interpreted in accordance with such meaning. Reference to standard specifications, manuals or codes of any technical society, organization or associations, or to the code of any governmental authority whether such reference be specific or implied, shall mean the latest standard specification, manual or code in effect as of the Effective Date of this Agreement, except as may be otherwise specifically stated. However, no provision of any referenced standard specification, manual or code (whether or not specifically incorporated by reference in the Contract Documents) shall change the duties and responsibilities of the City, the Contractor, or any of their agents or employees from those set forth in the Contract Documents.

#### **ARTICLE 5 – CONTRACT TIME**

- 5.1 The Contractor recognizes that **TIME IS OF THE ESSENCE**. The Work shall commence within **30** calendar days of the date of the Notice to Proceed.
- 5.2 The Work shall be Substantially Completed within **210** calendar days after the date when the Contract Time commences to run as provided in the Notice to Proceed.
- 5.3 The Work shall be finally completed on the Final Completion Date and ready for final payment in accordance with this Agreement within **240** calendar days after the date when the Contract Time commences to run as provided in the Notice to Proceed.

#### **ARTICLE 6 – CONTRACT PRICE**

- 6.1 City shall pay Contractor for performance of the Work in accordance with Article 7, subject to additions and deletions by Change Order, as provided for in this Agreement.
- 6.2 The parties expressly agree that the Contract Price, which shall not exceed the amount of \$\_\_\_\_\_, constitutes the total maximum compensation payable to Contractor for performing the Work, plus any Work done pursuant to a Change Order.

The Contract Price is in accordance with the line item unit prices listed in the Bid. Line items are based on a unit price cost multiplied by a defined quantity. Any additional duties, responsibilities and obligations assigned to or undertaken by Contractor shall be at Contractor's expense without change to the Contract Price.

- 6.3 The Contract Price constitutes the compensation payable to Contractor for performing the Work plus any Work done pursuant to a Change Order. All duties, responsibilities and obligations assigned to or undertaken by Contractor shall be at Contractor's expense without change in the Contract price.

## ARTICLE 7 – PAYMENT

- 7.1 Contractor shall submit Applications for Payment in accordance with the Contract Documents. Applications for Payment will be processed by City as provided in the General Conditions.
- 7.2 Progress Payments. City shall make progress payments on account of the Contract Price on the basis of Contractor's monthly Applications for Payment, which shall be submitted by the Contractor between the first (1<sup>st</sup>) and the tenth (10<sup>th</sup>) day after the end of each calendar month for which payment is requested. All progress payments will be made on the basis of the progress of the Work completed.
- 7.3 Prior to Final Completion, progress payments will be made in an amount equal to ninety percent (90%) of the value of Work completed less in each case the aggregate of payments previously made.
- 7.4 Final Payment. Upon final completion of the Work in accordance with the General Conditions, as may be supplemented, the City shall pay Contractor an amount sufficient to increase total payments to one-hundred percent (100%) of the Contract Price. However, not less than ten percent (10%) of the Contract Price shall be retained until Record Drawings (as-builts), specifications, addenda, modifications and shop drawings, including all manufacturers' instructional and parts manuals are delivered to and accepted by the City.
- 7.5 City may withhold, in whole or in part, payment to such extent as may be necessary to protect itself from loss on account of:
- 7.5.1 Defective work not remedied.
  - 7.5.2 Claims filed or reasonable evidence indicating probable filing of claims by other parties against Contractor or City because of Contractor's performance.
  - 7.5.3 Failure of Contractor to make payments properly to Subcontractors or for material or labor.
  - 7.5.4 Damage to another contractor not remedied.
  - 7.5.5 Liquidated damages and costs incurred by Consultant for extended construction administration, if applicable.
  - 7.5.6 Failure of Contractor to provide any and all documents required by the Contract Documents.

When the above grounds are removed or resolved satisfactory to the Project Manager, payment shall be made in whole or in part.

- 7.6 The City shall make payment to the Contractor in accordance with the Florida Prompt Payment Act, Section 218.70, Florida Statutes.
- 7.7 The City shall make payment to the Contractor through utilization of the City's P-Card Program.

### **ARTICLE 8 – CONTRACTOR'S REPRESENTATIONS**

In order to induce the City to enter into this Agreement, Contractor makes the following representations upon which the City has relied:

- 8.1 Contractor is qualified in the field of public construction and in particular to perform the Work and services set forth in this Agreement.
- 8.2 Contractor has visited the Work Site, has conducted extensive tests, examinations and investigations and represents and warrants a thorough familiarization with the nature and extent of the Contract Documents, the Work, locality, soil conditions, moisture conditions and all year-round local weather and climate conditions (past and present), and, in reliance on such tests, examination and investigations conducted by Contractor and the Contractor's experts, has determined that no conditions exist that would in any manner affect the Proposed Price and that the project can be completed for the Proposed Price submitted within the Contract Time as defined in this Agreement. Furthermore, Contractor warrants and confirms that he is totally familiar with, understands and obligates Contractor to comply with all federal, state and local laws, ordinances, rules, regulations and all market conditions that affect or may affect the cost and price of materials and labor needed to fulfill all provisions of this Agreement or that in any manner may affect cost, progress or performance of the Work.
- 8.3 The Contractor has satisfied itself as to the nature and location of the Work under the Contract Documents, the general and local conditions of the Project, particularly those bearing upon availability of transportation, disposal, handling and storage of materials, availability of labor, water, electric power, and roads, the conformation and conditions at the ground based on City provided reports, the type of equipment and facilities needed preliminary to and during the prosecution of the Work and all other matters which can in any way affect the Work or the cost thereof under the Contract Documents.
- 8.4 The Contractor has also studied carefully all reports of investigations and tests of subsurface and latent physical conditions at the site or otherwise affecting cost, progress or performance of the Works, and finds and has further determined that no conditions exist that would in any manner affect the Proposed Price and that the project can be completed for the Proposed Price submitted.
- 8.5 Contractor has made or caused to be made examinations, investigations, tests and studies of such reports and related data in addition to those referred to in Paragraphs 8.2, 8.3 and 8.4 above as he deems necessary for the performance of the Work at the Contract Prices, within the Contract Time and in accordance with the other terms and conditions of the Contract Documents; and no additional examinations, investigations, tests, reports or similar data are, or will be, required by Contractor for such purposes.

8.6 Contractor has correlated the results of all such observations, examinations, investigations, tests, reports and data with the terms and conditions of the Contract Documents.

8.7 Contractor has given City written notice of all conflicts, errors or discrepancies that he has discovered in the Contract Documents and the written resolution by City is acceptable to the Contractor.

8.8 Labor

8.8.1 The Contractor shall provide competent, suitable qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. The Contractor shall at all times maintain good discipline and order at the site.

8.8.2 The Contractor shall, at all times, have a competent superintendent, capable of reading and thoroughly understanding the drawings and specifications, as the Contractor's agent on the Work, who shall, as the Contractor's agent, supervise, direct and otherwise conduct the Work.

8.8.3 The Contractor shall designate the superintendent on the job to the City, in writing, immediately after receipt of the Notice to Proceed. The Contractor understands and agrees that the superintendent's physical presence on the job site is indispensable to the successful completion of the Work. If the superintendent is frequently absent from the job site, the Project Manager may deliver written notice to the Contractor to stop work or terminate the Contract in accordance with Article 17.

8.8.4 The Contractor shall assign personnel to the job site that have successfully completed training programs related to trench safety, confined space and maintenance of traffic. A certified "competent person" shall be assigned to the job site. Personnel certified by the International Municipal Signal Associations with Florida Department of Transportation qualifications are required relative to maintenance of traffic. Failure to pursue the Work with the properly certified supervisory staff may result in notice to stop work or terminate the Contract in accordance with Article 17.

8.9 Materials

8.9.1 The Contractor shall furnish all materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water and sanitary facilities and all other facilities and incidentals necessary for the execution, testing, initial operation and completion of Work.

8.9.2 All material and equipment shall be of good quality and new, except as otherwise provided in the Contract Documents. Suppliers shall be selected and paid by the Contractor; the City reserves the right to approve all suppliers and materials.

8.10 Work Hours: Except in connection with the safety or protection of persons, or the Work, or property at the site or adjacent thereto, and except as otherwise indicated in

the Supplementary Conditions, all work at the site shall be performed during regular working hours between 7 a.m. and 6:00 p.m., Monday through Friday. The Contractor will not permit overtime work or the performance of work on Saturday, Sunday or any legal holiday (designated by the City of Fort Lauderdale) without the Project Manager's written consent at least seventy-two (72) hours in advance of starting such work. If the Project Manager permits overtime work, the Contractor shall pay for the additional charges to the City with respect to such overtime work. Such additional charges shall be a subsidiary obligation of the Contractor and no extra payment shall be made to the Contractor for overtime work. It shall be noted that the City's Inspector work hours are from 8:00 a.m. to 4:30 p.m. and any Work requiring inspection oversight being performed outside of this timeframe shall be paid for by the Contractor as Inspector overtime. The cost to the Contractor to reimburse the City for overtime inspection is established at direct-labor and overtime costs for each person or inspector required. Incidental overtime costs for engineering, testing and other related services will also be charged to the Contractor at the actual rate accrued.

- 8.11 Patent Fee and Royalties: The Contractor shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work, or any invention, design, process, product or device which is the subject of patent rights or copyrights held by others. The Contractor hereby expressly binds himself or itself to indemnify and save harmless the City from all such claims and fees and from any and all suits and action of every name and description that may be brought against City on account of any such claims, fees, royalties, or costs for any such invention or patent, and from any and all suits or actions that may be brought against said City for the infringement of any and all patents or patent rights claimed by any person, firm corporation or other entity.
- 8.12 Permits: The Contractor shall obtain and pay for all permits and licenses. There shall be no allowance for Contractor markup, overhead or profit for permits and licenses. The Contractor shall pay all government charges which are applicable at the time of opening of proposals. It shall be the responsibility of the Contractor to secure and pay for all necessary licenses and permits of a temporary nature necessary for the prosecution of Work.
- 8.13 Law and Regulations: The Contractor shall give all notices and comply with all laws, ordinances, rules and regulations applicable to the Work. If the Contractor observes that the specifications or plans are at variance therewith, the Contractor shall give the Project Manager prompt written notice thereof, and any necessary changes shall be adjusted by any appropriate modifications. If the Contractor performs any work knowing or having reason to know that it is contrary to such laws, ordinances, rules and regulations, and without such notice to the Project Manager, the Contractor shall bear all costs arising therefrom; however, it shall not be the Contractor's primary responsibility to make certain that the specifications and plans are in accordance with such laws, ordinances, rules and regulations.
- 8.14 Taxes: The Contractor shall pay all sales, consumer, use and other similar taxes required to be paid by him in accordance with the laws of the City of Fort Lauderdale, County of Broward, State of Florida.
- 8.15 Contractor Use of Premises: The Contractor shall confine construction equipment, the storage of materials and equipment and the operations of workmen to areas permitted

by law, ordinances, permits and/or the requirements of the Contract Documents, and shall not unreasonably encumber the premises with construction equipment or other materials or equipment.

The Contractor shall not enter upon private property for any purpose without first securing the permission of the property owner in writing and furnishing the Project Manager with a copy of said permission. This requirement will be strictly enforced, particularly with regard to such vacant properties as may be utilized for storage or staging by the Contractor.

The Contractor shall conduct his work in such a manner as to avoid damage to adjacent private or public property. Any damage to existing structures or work of any kind, including permanent reference markers or property corner markers, or the interruption of a utility service, shall be repaired or restored promptly at no expense to the City or property owner.

The Contractor will preserve and protect all existing vegetation such as trees, shrubs and grass on or adjacent to the site which do not reasonably interfere with the construction, as determined by the Project Manager. The Contractor will be responsible for repairing or replacing any trees, shrubs, lawns and landscaping that may be damaged due to careless operation of equipment, stockpiling of materials, tracking of grass by equipment or other construction activity. The Contractor will be liable for, or will be required to replace or restore at no expense to the City all vegetation not protected or preserved as required herein that may be destroyed or damaged.

During the progress of the work, the Contractor shall keep the premises free from accumulations of waste materials, rubbish and debris resulting from the Work. At the completion of the Work, the Contractor shall remove all waste materials, rubbish and debris from and about the premises as well as all tools, appliances, construction equipment and machinery, and surplus materials and shall leave the site clean and ready for occupancy by the City. The Contractor shall restore to their original condition those portions of the site not designated for alteration by the Contract Documents at no cost to the City.

8.16 Project Coordination: The Contractor shall provide for the complete coordination of the construction effort. This shall include, but not necessarily be limited to, coordination of the following:

8.16.1 Flow of material and equipment from suppliers.

8.16.2 The interrelated work with affected utility companies.

8.16.3 The interrelated work with the City where tie-ins to existing facilities are required.

8.16.4 The effort of independent testing agencies.

8.16.5 Notice to affected property owners as may be directed by the Project Manager.

8.17 Project Record Documents and Final As-Builts (Record Drawings): Contractor shall be responsible for maintaining up-to-date redline as-built drawings, on site, at all times during construction. All as-built information shall be surveyed and verified by a professional land surveyor registered in the State of Florida. Contractor shall provide the City with a minimum of three (3) sets of signed and sealed record drawings (Final

As-Builts) and a CD of the electronic drawings files created in AutoCad 2014 or later. All costs associated with survey work required for construction layout and as-built preparation shall be the responsibility of the Contractor.

#### 8.18 Safety and Protection:

8.18.1 The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. The Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to:

- 8.18.1.1 All employees working on the project and other persons who may be affected thereby.
- 8.18.1.2 All the Work and all materials or equipment to be incorporated therein, whether in storage on or off the site.
- 8.18.1.3 Other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

8.18.2 The Contractor shall comply with all applicable laws, ordinances, rules, regulations and orders of any public body having jurisdiction for the safety of persons or property or to protect them from damage, injury or loss; and shall erect and maintain all necessary safeguards for such safety and protection. The Contractor shall notify owners of adjacent property and utilities when execution of the Work may affect them at least seventy-two (72) hours in advance (unless otherwise required). All damage, injury or loss to any property caused, directly or indirectly, in whole or in part by the Contractor, any subcontractor or anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, shall be remedied by the Contractor. The Contractor's duties and responsibilities for safety and protection of the Work shall continue until such time as all the Work is completed and accepted by the City.

8.19 Emergencies: In emergencies affecting the safety or protection of persons or the Work or property at the site or adjacent thereto, the Contractor, without special instruction or authorization from the City is obligated to act to prevent threatened damage, injury or loss. The Contractor shall give the Project Manager prompt written notice of any significant changes in the Work or deviations from the Contract Documents caused thereby.

8.20 Risk of Loss: The risk of loss, injury or destruction shall be on the Contractor until acceptance of the Work by the City. Title to the Work shall pass to the City upon acceptance of the Work by the City.

8.21 Environmental: The Contractor has fully inspected the Premises and agrees, except as to the presence of any asbestos, to accept the Premises in an "as is" physical condition, without representation or warranty by the City of any kind, including, without limitation, any and all existing environmental claims or obligations that may arise from the presence of any "contamination" on, in or about the Premises. Further, Contractor and all entitles claiming by, through or under the Contractor, releases and discharges

the City, from any claim, demand, or cause of action arising out of or relating to the Contractor's use, handling, storage, release, discharge, treatment, removal, transport, decontamination, cleanup, disposal and/or presence of any hazardous substances including asbestos on, under, from or about the Premises. The Contractor shall have no liability for any pre-existing claims or "contamination" on the Premises.

The Contractor shall not use, handle, store, discharge, treat, remove, transport, or dispose of Hazardous Substances including asbestos at, in, upon, under, to or from the Premises until receipt of instructions from the City. At such time, a City approved Change Order, which shall not include any profit, shall authorize the Contractor to perform such services.

The Contractor shall immediately deliver to the Project Manager complete copies of all notices, demands, or other communications received by the Contractor from any governmental or quasi-governmental authority or any insurance company or board of fire underwriters or like or similar entities regarding in any way alleged violations or potential violations of any Environmental Law or otherwise asserting the existence or potential existence of any condition or activity on the Premises which is or could be dangerous to life, limb, property, or the environment.

For other and additional consideration, the Contractor hereby agrees, at its sole cost and expense, to indemnify and protect, defend, and hold harmless the City and its respective employees, agents, officials, officers, representatives, contractors and subcontractors, successors, and assigns (hereafter the "City") from and against any and all claims, demands, losses, damages, costs, expenses, including but not limited to mitigation, restoration, and natural restoration expenses, liabilities, assessments, fines, penalties charges, administrative and judicial proceedings and orders, judgments, causes of action, in law or in equity, remedial action requirements and/or enforcement actions of any kind (including, without limitation, attorneys' fees and costs) directly or indirectly arising out of or attributable to, in whole or in part, the Contractor's use, handling, storage, release, threatened release, discharge, treatment, removal, transport, decontamination, cleanup, disposal and/or presence of a Hazardous Substance (excluding asbestos) on, under, from, to or about the Premises or any other activity carried on or undertaken on or off the Premises by the Contractor or its employees, agents or subcontractors, in connection with the use, handling, storage, release, threatened release, discharge, treatment, mitigation, natural resource restoration, removal, transport, decontamination, cleanup, disposal and/or presence or any Hazardous Substance including asbestos located, transported, or present on, under, from, to, or about the Premises. This indemnity is intended to be operable under 42 U.S.C. sections 9607, as amended, and any successor section.

The scope of the indemnity obligations includes, but is not limited to: (a) all consequential damages; (b) the cost of any required or necessary repair, cleanup, or detoxification of the applicable real estate and the preparation and implementation of any closure, remedial or other required plan, including without limitation; (i) the costs of removal or remedial action incurred by the United States government or the State of Florida or response costs incurred by any other person, or damages from injury to destruction of, or loss of, natural resources, including the cost of assessing such injury, destruction, or loss, incurred pursuant to the Comprehensive Environmental Response, Compensation and Liability Act, as amended; (ii) the clean-up costs, fines, damages, or penalties incurred pursuant to any applicable provisions of Florida law;

and (iii) the cost and expenses of abatement, correction or cleanup, fines, damages, response costs, or penalties which arise from the provisions of any other statute, law, regulation, code ordinance, or legal requirement state or federal; and (c) liability for personal injury or property damage arising under any statutory or common law tort theory, including damages assessed for the maintenance of a public private nuisance, response costs, or for the carrying on of an abnormally dangerous activity.

8.22 No Extended Damages: For other and additional good and valuable consideration the receipt and sufficiency of which is hereby acknowledged, the Contractor covenants and agrees that in the event of any delay of construction or for any other reason or allegation or claim, and notwithstanding the reason of the delay, reason, claim or allegation or who caused them or the construction delay or whether they were caused by the City, that there will be no entitlement to Contractor to or for any direct or indirect financial damages or losses for extended corporate overhead impact, extended project overhead impacts, project support services, mobilization or demobilization or by whatever other label or legal concept or theory and types of names or labels or basis such claims may have, or any business damages or losses of whatever type or nature, and Contractor hereby waives any right to make any such claim or claims. This provision will have application and effect when construction delays are anticipated and agreed upon by both the City and the Contractor.

8.23 No Liens: If any Subcontractor, supplier, laborer, or materialmen of Contractor or any other person directly or indirectly acting for or through Contractor files or attempts to file a mechanic's or construction lien against the real property on which the work is performed or any part or against any personal property or improvements or claim against any monies due or to become due from the City to Contractor or from Contractor to a Subcontractor, for or on account of any work, labor, services, material, equipment, or other items furnished in connection with the Work or any Change Order, Contractor agrees to satisfy, remove, or discharge such lien or claim at its own expense by bond, payment, or otherwise within twenty (20) days of the filing or from receipt of written notice from the City.

Additionally, until such time as such lien or claim is satisfied, removed or discharged by Contractor, all monies due to Contractor, or that become due to Contractor before the lien or claim is satisfied, removed or otherwise discharged, shall be held by City as security for the satisfaction, removal and discharge of such lien and any expense that may be incurred while obtaining such. If Contractor shall fail to do so, City shall have the right, in addition to all other rights and remedies provided by this Agreement or by law, to satisfy, remove, or discharge such lien or claim by whatever means City chooses at the entire and sole cost and expense of Contractor which costs and expenses shall, without limitation, include attorney's fees, litigation costs, fees and expenses and all court costs and assessments.

8.24 Weather Emergencies: Upon issuance of a Hurricane Watch by the National Weather Service, the Contractor shall submit to the City a plan to secure the work area in the event a Hurricane Warning is issued. The plan shall detail how the Contractor will secure the Premises, equipment and materials in a manner as to prevent damage to the Work and prevent materials and equipment from becoming a hazard to persons and property on and around the Premises. The plan shall include a time schedule required to accomplish the hurricane preparations and a list of emergency contacts that will be available and in the City before, during and immediately after the storm.

Upon issuance of a Hurricane Warning by the National Weather Service, if the Contractor has not already done so, the Contractor shall implement its hurricane preparedness plan. Cost of development and implementation of the hurricane preparedness plan shall be considered as incidental to construction. Cost of any clean up and rework required after the storm will be considered normal construction risk within Florida and shall not entitle the Contractor to any additional compensation. Contractor shall be entitled to request an extension in time for completion of the Work, in accordance with the provisions of Article 15 of this Agreement, equal to the time he is shut down for implementation of the preparedness plan, the duration of the storm and a reasonable period to restore the Premises.

- 8.25 Force Majeure: No Party shall hold the other responsible for damages or for delays in performance caused by force majeure, acts of God, or other acts or circumstances beyond the control of the other party or that could not have been reasonably foreseen and prevented. For this purposes, such acts or circumstances shall include, but not be limited to weather conditions affecting performance, floods, epidemics, war, riots, strikes, lockouts, or other industrial disturbances, or protest demonstrations. Should such acts or circumstances occur, the parties shall use their best efforts to overcome the difficulties arising therefrom and to resume the Work as soon as reasonably possible with the normal pursuit of the Work.

Inclement weather, continuous rain for less than three (3) days or the acts or omissions of subcontractors, third-party contractors, materialmen, suppliers, or their subcontractors, shall not be considered acts of force majeure.

No Party shall be liable for its failure to carry out its obligations under the Agreement during a period when such Party is rendered unable by force majeure to carry out its obligation, but the obligation of the Party or Parties relying on such force majeure shall be suspended only during the continuance of the inability and for no longer period than the unexpected or uncontrollable event.

The Contractor further agrees and stipulates, that its right to excuse its failure to perform by reason of force majeure shall be conditioned upon giving written notice of its assertion that a Force Majeure delay has commenced within 96 hours after such an occurrence. The CONTRACTOR shall use its reasonable efforts to minimize such delays. The CONTRACTOR shall promptly provide an estimate of the anticipated additional time required to complete the Project.

- 8.26 Participation by Disadvantaged Business Enterprises in Department of Transportation Financial Assisted Contracts: The recipient shall not discriminate on the basis of race, color, national origin, or sex in the award and performance of any DOT-assisted contract or in the administration of its DBE program or the requirements of 49 CFR part 26. The recipient shall take all necessary and reasonable steps under 49 CFR part 26 to ensure nondiscrimination in the award and administration of DOT-assisted contracts. The recipient's DBE program, as required by 49 CFR part 26 and as approved by DOT, is incorporated by reference in this agreement. Implementation of this program is a legal obligation and failure to carry out its terms shall be treated as a violation of this agreement. Upon notification to the recipient of its failure to carry out its approved program, the Department may impose sanctions as provided for under part 26 and may, in appropriate cases, refer the matter for enforcement under 18 U.S.C. 1001 and/or the Program Fraud Civil Remedies Act of 1986 (31 U.S.C. 3801 *et seq.*).

Additionally, the contractor assures that they, the sub recipient or the subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the recipient deems appropriate. (This additional language must be included in each subcontract the prime contractor signs with a subcontractor.)

## ARTICLE 9 – CITY’S RESPONSIBILITIES

- 9.1 The City shall furnish the data required of the City under the Contract Documents promptly and shall make payments to the Contractor promptly after they are due as provided in Article 7.
- 9.2 The City’s duties in respect of providing lands and easements and providing engineering surveys to establish reference points are set forth in the Contract Documents.
- 9.3 Technical Clarifications and Interpretations:
- 9.3.1 The City shall issue, with reasonable promptness, such written clarifications or interpretations of the Contract Documents as it may determine necessary, which shall be consistent with or reasonably inferable from the overall intent of the Contract Documents. Should the Contractor fail to request interpretation of questionable items in the Contract Documents, the City shall not entertain any excuse for failure to execute the Work in a satisfactory manner.
- 9.3.2 The City shall interpret and decide matters concerning performance under the requirements of the Contract Documents, and shall make decisions on all claims, disputes or other matters in question. Written notice of each claim, dispute or other matter will be delivered by claimant to the other Party but in no event later than five (5) days after the occurrence of event, and written supporting data will be submitted to the other Party within five (5) days after such occurrence. All written decisions of the City on any claim or dispute will be final and binding.
- 9.4 The Contractor shall perform all Work to the reasonable satisfaction of the City in accordance with the Contract Documents. In cases of disagreement or ambiguity, the City shall decide all questions, difficulties, and disputes of whatever nature, which may arise under or by reason of this Agreement or the quality, amount and value of the Work, and the City’s decisions on all claims, questions and determination are final.

## ARTICLE 10 – BONDS AND INSURANCE

- 10.1 Public Construction and Other Bonds: The Contractor shall furnish Public Construction or Performance and Payment Bonds (“Bond”), each in an amount at least equal to the Contract Price as security for the faithful performance and payment of all

the Contractor's obligations under the Contract Documents. These Bonds shall remain in effect until at least one (1) year after the date of final payment, except as otherwise provided by law. All Bonds shall be furnished and provided by the surety and shall be in substantially the same form as prescribed by the Contract Documents and be executed by such sureties as (i) are licensed to conduct business in the State of Florida, and (ii) are named in the current list of Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies as published in Circular 570 (amended) by the Audit Staff Bureau of Accounts, U.S. Treasury Department and (iii) otherwise meet the requirements set forth herein that apply to sureties. All Bonds signed by an agent must be accompanied by a certified copy of the authority to act.

10.1.1 Performance Bond: A Corporate Surety Bond legally issued, meeting the approval of, and running to the City in an amount not less than the Contract Price of such improvements, conditioned that the Contractor shall maintain and make all repairs to the improvements constructed by the Contractor at their own expense and free of charge to the City, for the period of one (1) year after the date of acceptance of the Work within such period by reason of any imperfection of the material used or by reason of any defective workmanship, or any improper, imperfect or defective preparation of the base upon which any such improvement shall be laid.

The Contractor shall execute and record in the public records of Broward County, Florida, a payment and performance bond in an amount at least equal to the Contract Price with a surety insurer authorized to do business in the State of Florida as surety, ("Bond") in accordance with Section 255.05, Florida Statutes (2014), as may be amended or revised, as security for the faithful performance and payment of all of the Contractor's obligations under the Contract Documents.

10.2 Disqualification of Surety: If the Surety on any Bond furnished by the Contractor is declared bankrupt or becomes insolvent or its right to do business is terminated in the State of Florida or it ceases to meet the requirements of clauses (i) and (ii) of Paragraph 10.1, the Contractor shall within five (5) days thereafter substitute another Bond and Surety, both of which shall be acceptable to the City.

### 10.3 Insurance

10.3.1 Contractor shall provide and shall require all of its sub-contractors to provide, pay for, and maintain in force at all times during the term of the Agreement, such insurance, including Property Insurance (Builder's Risk), Commercial General Liability Insurance, Business Automobile Liability Insurance, Workers' Compensation Insurance, Employer's Liability Insurance, and Umbrella/Excess Liability, as stated below, as well as Professional Liability insurance in the amount of \$1,000,000 for any Architectural and or Engineering requirements associated with the fulfillment of the contract if required. Such policy or policies shall be issued by companies authorized to do business in the State of Florida and having agents upon whom service of process may be made in the State of Florida. **A Sample Insurance Certificate shall be included with the proposal to demonstrate the firm's ability to comply with**

**insurance requirements. Provide a previous certificate or other evidence listing the insurance companies' names for all required coverage, and the dollar amounts of the coverage.**

- A. The City is required to be named as additional insured on the Commercial General Liability insurance policy. BINDERS ARE UNACCEPTABLE. The insurance coverage required shall include those classifications, as listed in standard liability insurance manuals, which most nearly reflect the operations of the Contractor. Any exclusions or provisions in the insurance maintained by the Contractor that precludes coverage for the work contemplated in this Agreement shall be deemed unacceptable, and shall be considered a breach of contract.
- B. The Contractor shall provide the City an original Certificate of Insurance for policies required by Article 10. All certificates shall state that the City shall be given ten (10) days' notice prior to expiration or cancellation of the policy. The insurance provided shall be endorsed or amended to comply with this notice requirement. In the event that the insurer is unable to accommodate, it shall be the responsibility of the Contractor to provide the proper notice. Such notification will be in writing by registered mail, return receipt requested and addressed to the Finance Department. Such policies shall: (1) name the insurance company or companies affording coverage acceptable to the City, (2) state the effective and expiration dates of the policies, (3) include special endorsements where necessary. Such policies provided under Article 10 shall not be affected by any other policy of insurance, which the City may carry in its own name.
- C. Contractor shall as a condition precedent of this Agreement, furnish to the City of Fort Lauderdale, c/o Project Manager, 100 N. Andrews Avenue, Fort Lauderdale, FL 33301, Certificate(s) of Insurance upon execution of this Agreement, which indicate that insurance coverage has been obtained which meets the requirements as outlined below:

10.3.2 Property Insurance (Builder's Risk): The Contractor shall purchase and maintain property insurance upon the Work at or off the site of 100% of the contract completed value. These policies shall insure the interest of the owner, contractor and subcontractors in the Work, and shall insure against "all risks" of physical loss and damage including theft, vandalism and malicious mischief, collapse and water damage. All such insurance required by this paragraph shall remain in effect until the Work is completed and accepted by the City.

10.3.3 Commercial General Liability

- A. Limits of Liability:
 

Bodily Injury and Property Damage - Combined Single Limit	
Each Occurrence	\$1,000,000
Project Aggregate	\$1,000,000
General Aggregate	\$2,000,000
Personal Injury	\$1,000,000

Products/Completed Operations \$1,000,000

- B. Endorsements Required:  
 City of Fort Lauderdale included as an Additional Insured  
 Broad Form Contractual Liability  
 Waiver of Subrogation  
 Premises/Operations  
 Products/Completed Operations  
 Independent Contractors  
 Owners and Contractors Protective Liability  
 Contractor's Pollution Liability

#### 10.3.4 Business Automobile Liability

- A. Limits of Liability:  
 Bodily Injury and Property Damage - Combined Single Limit  
 All Autos used in completing the contract including Hired, Borrowed or  
 Non-Owned Autos  
 Any One Accident \$1,000,000
- B. Endorsements Required:  
 Waiver of Subrogation

#### 10.3.5 Workers' Compensation and Employer's Liability Insurance

Limits: Workers' Compensation - Per Florida Statute 440  
 Employers' Liability - \$500,000

Any firm performing work on behalf of the City of Fort Lauderdale must provide Workers' Compensation insurance. Exceptions and exemptions can only be made if they are in accordance with Florida Law.

Contractor must be in compliance with all applicable State and Federal workers' compensation laws, including the U.S. Longshore Harbor Workers' Act or Jones Act.

- 10.3.6 Umbrella/Excess Liability: The Contractor shall provide umbrella/excess coverage with limits of no less than \$2,000,000 excess of Commercial General Liability, Automobile Liability and Employer's Liability.

- 10.3.7 All insurance policies required above shall be issued by companies authorized to do business under the laws of the State of Florida, with the following qualifications:

The Contractor's insurance must be provided by an A.M. Best's "A-" rated or better insurance company authorized to issue insurance policies in the State of Florida, subject to approval by the City's Risk Manager. Any exclusions or provisions in the insurance maintained by the Contractor that precludes coverage for work contemplated in this project shall be deemed unacceptable, and shall be considered breach of contract.

NOTE: CITY PROJECT NUMBER MUST APPEAR ON EACH CERTIFICATE.

**A Sample Insurance Certificate shall be included with the proposal to demonstrate the firm's ability to comply with insurance requirements. Provide a previous certificate or other evidence listing the insurance companies' names for all required coverage, and the dollar amounts of the coverage.**

Compliance with the foregoing requirements shall not relieve the Contractor of their liability and obligation under this section or under any other section of this Agreement.

The Contractor shall be responsible for assuring that the insurance certificates required in conjunction with this Section remain in force for the duration of the Project. If insurance certificates are scheduled to expire during the contractual period, the Contractor shall be responsible for submitting new or renewed insurance certificates to the City at a minimum of thirty (30) calendar days in advance of such expiration. In the event that expired certificates are not replaced with new or renewed certificates that cover the contractual period, the City shall:

- A. Suspend the Agreement until such time as the new or renewed certificates are received by the City.
- B. The City may, at its sole discretion, terminate the Agreement for cause and seek damages from the Contractor in conjunction with the violation of the terms and conditions of the Agreement.

#### **ARTICLE 11- WARRANTY AND GUARANTEE, TESTS AND INSPECTIONS, CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK**

11.1 Warranty: The Contractor warrants and guarantees to the City that all Work will be in accordance with the Contract Documents and will not be defective. Prompt notice of all defects shall be given to the Contractor. All defective work, whether or not in place, may be rejected, corrected or accepted as provided in this Article.

11.1.1 Warranty of Title: The Contractor warrants to the City that it possesses good, clear and marketable title to all equipment and materials provided and that there are no pending liens, claims or encumbrances against the equipment and materials.

11.1.2 Warranty of Specifications: The Contractor warrants that all equipment, materials and workmanship furnished, whether furnished by the Contractor, its subcontractors or suppliers, will comply with the specifications, drawings and other descriptions supplied or adopted and that all services will be performed in a workmanlike manner.

11.1.3 Warranty of Merchantability: The Contractor warrants that any and all equipment to be supplied pursuant to this Agreement is merchantable, free from

defects, whether patent or latent in material or workmanship, and fit for the ordinary purposes for which it is intended.

11.2 Tests and Inspections: Contractor shall retain the services of an independent, certified, testing lab to perform all testing as required by the specifications, Contract drawings, and any applicable permitting agency. Contractor shall provide evidence of certification to the City before the work and testing is done. Testing results shall be submitted to the Engineer for review and approval at the time the results are provided to the Contractor. The Contractor shall give the Project Manager and City Inspector a minimum of twenty-four (24) hours' advanced notice of readiness of the Work for all required inspections, tests, or approvals and shall notify all applicable permitting agencies in a timely manner based on requirements set forth in the permit documents.

11.2.1 Neither observations by the Project Manager nor inspections, tests or approvals by others shall relieve the Contractor from its obligations to perform the Work in accordance with the Contract Documents.

11.3 Uncovering Work: If any work that is to be inspected, tested or approved is covered without approval or consent of the Project Manager, it must, if requested by the Project Manager, be uncovered for observation and/or testing. Such uncovering and replacement shall be at the Contractor's sole expense unless the Contractor has given the Project Manager timely notice of the Contractor's intention to cover such Work and the Project Manager has not acted with reasonable promptness in response to such notice.

11.3.1 If the Project Manager considers it necessary or advisable that Work covered in accordance with Paragraph 11.2.1, 11.2.2 and 11.2.3 be observed by the City or inspected or tested by others, the Contractor at the City's request, shall uncover, expose or otherwise make available for observation, inspection or testing as the Project Manager may require, that portion of the Work in question, furnishing all necessary labor, material and equipment. If it is found that such Work is defective, the Contractor shall bear all the expenses of such uncovering, exposure, observation, inspection and testing and of satisfactory reconstruction, including compensation for additional professional services, and an appropriate deductive Change Order shall be issued. If, however, such work is not found to be defective, the Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Time, or both, directly attributable to such uncovering, exposure, observation, inspection testing and reconstruction if he makes a claim therefore as provided in Articles 14 and 15.

11.4 City May Stop the Work: If the Work is defective, or the Contractor fails to supply sufficient skilled supervisory personnel or workmen or suitable materials or equipment or the work area is deemed unsafe, the City may order the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of the City to stop the Work shall not give rise to any duty on the part of the City to exercise this right for the benefit of the Contractor or any other party. The City will not award any increase in Contract Price or Contract Time if the Work is stopped due to the circumstances described herein.

11.5 Correction or Removal of Defective Work Before Final Payment: If required by the Project Manager, the Contractor shall promptly, without cost to the City and as

Specified by the Project Manager, either correct any defective Work, whether or not fabricated, installed or completed, or if the Work has been rejected by the City remove it from the site and replace it with non-defective Work.

- 11.6 One Year Correction Period After Final Payment: If within one (1) year after the date of final acceptance, or such longer period of time as may be prescribed by law or by the terms of any applicable special guarantee required by the Contract Documents, any work is found to be defective, the Contractor shall promptly, without cost to the City and in accordance with the City's written instructions, either correct such defective Work, or, if it has been rejected by the City, remove it from the site and replace it with non-defective Work.

If The Contractor does not promptly comply with the terms of such instructions or in an emergency where delay would cause serious risk of loss or damage, the City may have the defective Work corrected or the rejected Work removed and replaced, and all direct and indirect costs for such removal and replacement, including compensation for additional professional services, shall be paid by the Contractor.

- 11.7 Acceptance of Defective Work, Deductions: If, instead of requiring correction or removal and replacement of defective Work, the City, at the city's sole option, prefers to accept it, the City may do so. In such a case, if acceptance occurs prior to the Project Manager's recommendation of final payments, a Change Order shall be issued incorporating the necessary revisions in the Contracts Documents, including appropriate reduction in the Contract Price; or if the acceptance occurs after such recommendation, an appropriate amount shall be paid by the Contractor to the City.

- 11.8 City May Correct Defective Work: If the Contractor fails within a reasonable time after written notice of the Project Manager to proceed to correct defective Work or to remove and replace rejected Work as required by the Project Manager in accordance with Paragraph 11.5, or if the Contractor fails to perform the Work in accordance with the Contract Documents, the City may, after seven (7) days written notice to the Contractor, correct and remedy any such deficiency. In exercising its rights under this paragraph, the City shall proceed expeditiously. To the extent necessary to complete corrective and remedial action, the City may exclude the Contractor from all or part of the site, take possession of all or part of the Work, suspend the Contractor's services related thereto and take possession of the Contractor's tools, construction equipment and materials stored at the site or elsewhere. The Contractor shall allow the City's representative agents and employees such access to the site as may be necessary to enable the City to exercise its rights under this paragraph. All direct and indirect costs of the City in exercising such rights shall be charged against the Contractor in an amount verified by the Project Manager, and a Change Order shall be issued incorporating the necessary revisions in the Contract Documents and a reduction in the Contract Price. Such direct and indirect costs shall include, in particular but without limitation, compensation for additional professional services required and costs of repair and replacement of work of others destroyed or damaged by correction, removal or replacement of the Contractor's defective Work. The Contractor shall not be allowed an extension of the Contract Time because of any delay in performance of the Work attributable to the exercise by the City of the City's right hereunder.

## ARTICLE 12 – INDEMNIFICATION

- 12.1 Disclaimer of Liability: The City shall not at any time, be liable for injury or damage occurring to any person or property from any cause, whatsoever, arising out of Contractor's construction and fulfillment of this agreement.
- 12.2 Indemnification: For other, additional good valuable consideration, the receipt and sufficiency of which is hereby acknowledged:
- 12.2.1 Contractor shall, at its sole cost and expense, indemnify and hold harmless the City, its representatives, employees and elected and appointed officials from or on account of all claims, damages, losses, liabilities and expenses, direct, indirect or consequential including but not limited to fees and charges of engineers, architects, attorneys, consultants and other professionals and court costs arising out of or in consequence of the performance of this Agreement at all trial and appellate levels. Indemnification shall specifically include but not be limited to claims, damages, losses, liabilities and expenses arising out of or from (a) the negligent or defective design of the project and Work of this Agreement; (b) any act, omission or default of the Contractor, its Subcontractors, agents, servants or employees; (c) any and all bodily injuries, sickness, disease or death; (d) injury to or destruction of tangible property, including any resulting loss of use; (e) other such damages, liabilities, or losses received or sustained by any person or persons during or on account of any operations connected with the construction of this Project including the warranty period; (f) the use of any improper materials; (g) any construction defect including both patent and latent defects; (h) failure to timely complete the work; (i) the violation of any federal, state, county or city laws, ordinances or regulations by Contractor, its subcontractors, agents, servants, independent contractors or employees; (j) the breach or alleged breach by Contractor of any term of the Agreement, including the breach or alleged breach of any warranty or guarantee.
- 12.2.2 Contractor agrees to indemnify, defend, save and hold harmless the City, its officers, agents and employees, from all damages, liabilities, losses, claims, fines and fees, and from any and all suits and actions of every name and description that may be brought against City, its officers, agents and employees, on account of any claims, fees, royalties, or costs for any invention or patent and/or for the infringement of any and all copyrights or patent rights claimed by any person, firm, or corporation.
- 12.2.3 Contractor shall pay all claims, losses, liens, settlements or judgments of any nature in connection with the foregoing indemnifications including, but not limited to, reasonable attorney's fees and costs for trials and appeals.
- 12.2.4 If any Subcontractor, supplier, laborer, or materialmen of Contractor or any other person directly or indirectly acting for or through Contractor files or attempts to file a mechanic's or construction lien against the real property on which the work is performed or any part or against any personal property or improvements thereon or make a claim against any monies due or to become due from the City to Contractor or from Contractor to a Subcontractor, for or on account of any work, labor, services, material, equipment, or other items

furnished in connection with the Work or any change order, Contractor agrees to satisfy, remove, or discharge such lien or claim at its own expense by bond, payment, or otherwise within five (5) days of the filing or from receipt of written notice from the City.

Additionally, until such time as such lien or claim is satisfied, removed or discharged by Contractor, all monies due to Contractor, or that become due to Contractor before the lien or claim is satisfied, removed or otherwise discharged, shall be held by City as security for the satisfaction, removal and discharge of such lien and any expense that may be incurred while obtaining the discharge. If Contractor shall fail to do so, City shall have the right, in addition to all other rights and remedies provided by this Agreement or by law, to satisfy, remove, or discharge such lien or claim by whatever means City chooses at the entire and sole cost and expense of Contractor which costs and expenses shall, without limitation, include attorney's fees, litigation costs, fees and expenses and all court costs and assessments, and which shall be deducted from any amount owing to Contractor. In the event the amount due Contractor is less than the amount required to satisfy Contractor's obligation under this, or any other article, paragraph or section of this Agreement, the Contractor shall be liable for the deficiency due the City.

12.2.5 The Contractor and the City agree that Section 725.06(2), Florida Statutes controls the extent and limits of the indemnification and hold harmless provisions of this Agreement, if any, and that the parties waive any defects in the wording of this Article that runs afoul of said statutory section.

### **ARTICLE 13 – CHANGES IN THE WORK**

- 13.1 Without invalidating this Agreement, the City may, at any time or from time to time order additions, deletions or revisions in the Work through the issuance of Change Orders. Upon receipt of a Change Order, the Contractor shall proceed with the Work involved. All Work shall be executed under the applicable conditions of the Contract Documents. If any Change Order causes an increase or decrease in the Contract Price or an extension or shortening of the Contract Time, an equitable adjustment will be made as provided in Article 14 or Article 15 on the basis of a claim made by either Party.
- 13.2 The Project Manager may authorize minor changes in the work not involving an adjustment in the Contract Price or the Contract Time, which are consistent with the overall intent of the Contract Documents. Such changes must be in writing and signed by the City and the Contractor.
- 13.3 If notice of any change affecting the general scope of the Work or change in the Contract Price is required by the provisions of any Bond to be given to the Surety, it will be the Contractor's responsibility to so notify the Surety, and the amount of each applicable Bond shall be adjusted accordingly. The Contractor shall furnish proof of such adjustment to the City.

## ARTICLE 14 – CHANGE OF CONTRACT PRICE

Change of Contract Price, approved by City, shall be computed as follows:

- 14.1 Cost of the Work: The term “Cost of the Work” means the sum of all direct costs necessarily incurred and paid by Contractor in the proper performance of the Work. Except as otherwise may be agreed to in writing by the City, these costs shall be in amounts no higher than those prevailing in the City and shall include only the following items and shall not include any of the costs itemized in Paragraph 14.3:
- 14.1.1 Payroll costs for employees in the direct employ of the Contractor in the performance of the Work under schedules of job classifications agreed upon by the City and the Contractor. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus and cost of fringe benefits which shall include social security contributions, unemployment, excise and payroll taxes, worker’s compensation, health and retirement benefits, bonuses, sick leave, vacation and applicable holiday pay.
- 14.1.2 Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage, and required suppliers and field services. All cash discounts, rebates and refunds and all returns from sale of surplus materials and equipment shall accrue to the City, and the Contractor shall make provisions so that they may be obtained.
- 14.1.3 Supplemental costs including the following:
- 14.1.3.1 Cost, including transportation and maintenance of all materials, supplies, equipment, machinery, appliances, office and temporary facilities at the site and hand tools not owned by the workers, which are consumed in the performance of the Work.
- 14.1.3.2 Rentals of all construction equipment and machinery and the parts whether rented from the Contractor or others in accordance with rental agreements approved by the City, and the costs of transporting, loading, unloading, installation, dismantling and removal. The rental of any such equipment, machinery or parts shall cease when the use is no longer necessary for the Work.
- 14.1.3.3 Sales, consumer, use or similar taxes related to the Work and for which the Contractor is liable, imposed by laws and regulations.
- 14.1.3.4 Royalty payments and fees for permits and licenses.
- 14.1.3.5 The cost of utilities, fuel and sanitary facilities at the Work site.
- 14.1.3.6 Minor expenses such as telegrams, long distance telephone calls, telephone service at the site, expressage and similar petty cash items in connection with the Work.

14.1.3.7 Cost of premiums for additional bonds and insurance required because of changes in the Work.

14.2 The Contract Price may only be increased by a Change Order when Work is modified in accordance with Article 13 and approved by the City in writing. Any claim for an increase in the Contract Price resulting from a Change Order shall be based on written notice delivered to the Project Manager within ten (10) days of the occurrence of the Change Order giving rise to the claim. Notice of the amount of the claim with supporting data shall be included in the Change Order and delivered within twenty (20) days of such occurrence unless Project Manager allows an additional period of time to ascertain accurate cost data. Any change in the Contract Price resulting from any such claim shall be incorporated in the Change Order. **IT IS EXPRESSLY AND SPECIFICALLY AGREED THAT ANY AND ALL CLAIMS FOR CHANGES TO THE CONTRACT PRICE SHALL BE WAIVED IF NOT SUBMITTED IN STRICT ACCORDANCE WITH THE REQUIREMENTS OF THIS SECTION.**

14.3 Not Included in the Cost of the Work: The term "cost of the Work" shall not include any of the following:

14.3.1 Payroll costs and other compensation of the Contractor's officers executives, principals (of partnership and sole proprietorships), general managers, engineers, architects, estimators, attorneys, auditor, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks and other personnel employed by the Contractor whether at the site or in the Contractor's principal or branch office for general administration of the work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 14.1.1, all of which are to be considered administrative costs covered by the Contractor's fee.

14.3.2 Expenses of the Contractor's principal and branch offices other than the Contractor's office at the site.

14.3.3 Any part of the Contractor's capital expenses, including interest on the Contractor's capital employed for the Work and charges against the Contractor for delinquent payments.

14.3.4 Cost of premiums for all bonds and for all insurance whether or not the Contractor is required by the Contract Documents to purchase and maintain the same.

14.3.5 Costs due to the negligence of the Contractor, any subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied and making good any damage to property.

14.3.6 Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraph 14.1

14.4 Basis of Compensation: The Contractor's compensation, allowed to the Contractor for overhead and profit, shall be determined as follows:

#### 14.4.1 A mutually acceptable negotiated fee:

14.4.1.1 For costs incurred under Paragraphs 14.1.1 and 14.1.2, the Contractor's fee shall not exceed five percent (5%).

14.4.1.2 No fee shall be payable on the basis of costs itemized under Paragraphs 14.1.3.1, 14.1.3.2, 14.1.3.3, 14.1.3.4, 14.1.3.5, 14.1.3.6, 14.1.3.7, 14.3.1, 14.3.2, 14.3.3, 14.3.4, 14.3.5 and 14.3.6.

14.4.1.3 The amount of credit to be allowed by the Contractor to the City for any such change which results in a net decrease plus a deduction in the Contractor's fee by an amount equal to five percent (5%) for the net decrease.

14.4.1.4 When both additions and credits are involved in any one change the combined overhead and profit shall be figured on the basis of net increase if any, however, not to exceed five percent (5%) of the agreed compensation. Profit will not be paid on any Work not performed.

14.5 Cost Breakdown Required: Whenever the cost of any Work is to be determined pursuant to this Article, the Contractor will submit in form acceptable to the City an itemized cost breakdown together with supporting documentation. Whenever a change in the Work is to be based upon mutual acceptance of a lump sum, whether the amount is an addition, credit, or no-charge-in-cost, the Contractor shall submit an estimate substantiated by a complete itemized breakdown:

14.5.1 The breakdown shall list quantities and unit prices for materials, labor, equipment and other items of cost.

14.5.2 Whenever a change involves the Contractor and one (1) or more subcontractors and the change is an increase in the agreed compensation, the overhead and profit percentage for the Contractor and each subcontractor shall be itemized separately.

14.6 Time for the City to Approve Extra Work: Any Extra Work in an amount up to and not exceeding a cumulative amount of \$25,000 for a specific project can be approved by the City Manager and shall require a written Change Order proposal to be submitted to the Public Works Director for submittal and approval by the City Manager. Extra Work exceeding the cumulative amount of \$25,000 for a specific project must be approved by the City Commission and a written Change Order proposal must be submitted to the Public Works Director for submittal and approval by the City Manager and City Commission. No financial or time claim for delay to the project resulting from the Change Order approval process outlined above under Section 14.6 will be allowed.

## ARTICLE 15 – CHANGE OF THE CONTRACT TIME

- 15.1 The Contract Time may only be changed by a Change Order. Any claim for an extension in the Contract Time shall be based on written notice delivered to the Project Manager within five (5) days of the occurrence of the event giving rise to the claim. Any change in the Contract Time resulting from any such claim shall be incorporated in a Change Order.
- 15.2 The Contract Time will be extended in an amount equal to time lost due to delays beyond the control of the Contractor if a claim is made there for as provided in Paragraph 15.1. Such delays shall include but not be limited to, acts or neglect by the City, or to fires, floods, labor disputes, epidemics, abnormal weather conditions, or acts of God.
- 15.3 All time limits stated in the Contract Documents are of the essence. The provisions of this Article 15 shall not exclude recovery for damages for delay by the Contractor.
- 15.4 Delays caused by or resulting from entities, contractors or subcontractors who are not affiliated with the CONTRACTOR (non-affiliated Contractors) shall not give rise to a claim by the CONTRACTOR for damages for increases in material and/or labor costs. Such entities, contractors and subcontractors include, but are not limited to, the City's contractors and subcontractors, Florida Power and Light Company, AT&T and Florida East Coast Railway, LLC.
- 15.5 Rights of Various Interests: Whenever work being done by City's forces or by other contractors is contiguous to or within the limits of work covered by this Contract, the respective rights of the various interests involved shall be established by the Project Manager to secure the completion of the various portions of the work in general harmony.

## ARTICLE 16 – LIQUIDATED DAMAGES

- 16.1 Upon failure of the Contractor to complete the Work within the time specified for completion, the Contractor shall pay to the City the sum of **Five Hundred Dollars (\$500.00)** for each and every calendar day that the completion of the Work is delayed beyond the time specified in this Agreement for completion, as fixed and agreed liquidated damages and not as a penalty, so long as the delay is caused by the Contractor. Should an act of God or the acts or omissions of the City, its agents or representatives, in derogation to the terms of this Agreement cause the delay, the Contractor shall not be responsible for the delay nor liquidated damages. Liquidated damages are fixed and agreed upon between the Parties, recognizing the impossibility of precisely ascertaining the amount of damages that will be sustained by the City as a consequence of such delay and both parties desiring to obviate any question of dispute concerning the amount of damages and the cost and effect of the failure of the Contractor to complete the Work on time. Liquidated damages shall apply separately to each portion of the Work for which a time of completion is given. The City shall have the right to deduct from or retain any compensation which may be due or which may become due and payable to the Contractor the amount of liquidated damages, and if the amount retained by the City is insufficient to pay in full such liquidated damages, the Contractor shall pay all

liquidated damages in full. The Contractor shall be responsible for reimbursing the City, in addition to liquidated damages or other damages for delay, for all costs of engineering, architectural fees, and inspection and other costs incurred in administering the construction of the Project beyond the completion date specified or beyond an approved extension of time granted to the Contractor whichever is later. Delays caused by or resulting from entities, contractors or subcontractors who are not affiliated with the Contractor shall not give rise to a claim by Contractor for damages for increase in material and/or labor costs. Such entities, contractors and subcontractors include, but are not limited to, the City's contractors and subcontractors, Florida Power and Light Company, AT&T, and Florida East Coast Railway, LLC.

- 16.2 No Extended Damages: For other and additional good and valuable consideration the receipt and sufficiency of which is hereby acknowledged, the Contractor covenants and agrees that in the event of any delay of construction or for any reason, allegation or claim, and notwithstanding the reason of the delay, reason, claim or allegation or who caused them or the construction delay or whether they were caused by the City, that there will be no entitlement to Contractor to or for any direct or indirect financial damages or losses for extended corporate overhead impact, extended project overhead impacts, project support services, mobilization or demobilization or by whatever other label or legal concept or theory and types of names or labels or basis such claims may have, or any business damages or losses of whatever type or nature, and Contractor hereby waives any right to make any such claim or claims. This provision will have application and effect when construction delays are anticipated and agreed upon by both the City and the Contractor.

## ARTICLE 17 – SUSPENSION OF WORK AND TERMINATION

- 17.1 City May Suspend Work: The City may, at any time and without cause, suspend the Work or any portion of the Work for a period of not more than ninety (90) days by notice in writing to the Contractor which shall fix the date on which Work shall be resumed. The Contractor shall resume the Work on the date fixed. The Contractor will be allowed an increase in the Contract Price or an extension of the Contract Time, or both, directly attributable to any suspension, if the Contractor makes a claim as provided in Articles 14 and 15.
- 17.2 City's Right to Terminate Contract: The City may terminate this Agreement upon fifteen (15) calendar days' written notice upon the occurrence of any one or more of the following events:
- 17.2.1 If the Contractor commences a voluntary case or a petition is filed against the Contractor, under any chapter of the Bankruptcy Code, or if the Contractor takes any equivalent or similar action by filing a petition or otherwise under any other federal or state law in effect at such time relating to the bankruptcy or insolvency.
- 17.2.2 If the Contractor makes a general assignment for the benefit of creditors.
- 17.2.3 If a trustee, receiver, custodian or agent of the Contractor is appointed under applicable law or under Contract, whose appointment or authority to take charge of property of the Contractor is for the purpose of enforcing a lien

against such property or for the purpose of general administration of such property for the benefit of the Contractor's creditors.

17.2.4 If Contractor fails to begin the Work within fifteen (15) calendar days after the Project Initiation Date, or fails to perform the Work with sufficient workers and equipment or with sufficient materials to ensure the prompt completion of the Work, or shall perform the Work unsuitably, or cause it to be rejected as defective and unsuitable, or shall discontinue the prosecution of the Work pursuant to the accepted schedule or if Contractor shall fail to perform any material term set forth in the Contract Documents, or from any other cause whatsoever shall not carry on the Work in an acceptable manner, Project Manager may give notice in writing to Contractor and its Surety of such delay, neglect or default, specifying the same.

17.2.5 If the Contractor repeatedly fails to make prompt payments to subcontractors or for labor, material or equipment.

17.2.6 If the Contractor repeatedly disregards proper safety procedures.

17.2.7 If the Contractor disregards any local, state or federal laws or regulations.

17.2.8 If the Contractor otherwise violates any provisions of this Agreement.

17.3 If Contractor, within a period of ten (10) calendar days after such notice, shall not proceed in accordance therewith, the City may exclude the Contractor from the Work site and take the prosecution of the Work out of the hands of the Contractor, and take possession of the Work and all of the Contractor's tools, appliances, construction equipment and machinery at the site and use them without liability to the City for trespass or conversion, incorporate in the Work all materials and equipment stored at the site or for which the City has paid the Contractor but which are stored elsewhere, and finish the Work as the City may deem expedient. In this instance, the Contractor shall not be entitled to receive any further compensation until the Work is finished.

17.3.1 If after notice of termination of Contractor's right to proceed, it is determined for any reason that Contractor was not in default, the rights and obligations of City and Contractor shall be the same as if the notice of termination had been issued pursuant to the Termination for Convenience clause as set forth in Section 17.5 below.

17.3.2 Upon receipt of Notice of Termination pursuant to Sections 17.2 or 17.5, Contractor shall promptly discontinue all affected work unless the Notice of Termination directs otherwise and deliver or otherwise make available to City all data, drawings, specifications, reports, estimates, summaries and such other information as may have been required by the Contract Documents whether completed or in process.

17.4 If the Contractor commits a default due to its insolvency or bankruptcy, the following shall apply:

17.4.1 Should this Agreement be entered into and fully executed by the parties, funds released and the Contractor (Debtor) files for bankruptcy, the following shall occur:

17.4.1.1 In the event the Contactor files a voluntary petition under 11 U.S.C. 301 or 302, or an order for relief is entered under 11 U.S.C. 303, the Contractor shall acknowledge the extent, validity, and priority of the lien recorded in favor of the City. The Contractor further agrees that in the event of this default, the City shall, at its option, be entitled to seek relief from the automatic stay pursuant to 11 U.S.C. 362. The City shall be entitled to relief from the automatic stay pursuant to 11 U.S.C. 362(d) (1) or (d) (2), and the Contactor agrees to waive the notice provisions in effect pursuant to 11 U.S.C. 362 and any applicable Local Rules of the United States Bankruptcy Court. The Contactor acknowledges that such waiver is done knowingly and voluntarily.

17.4.1.2 Alternatively, in the event the City does not seek stay relief, or if stay relief is denied, the City shall be entitled to monthly adequate protection payments within the meaning of 11 U.S.C. 361. The monthly adequate protection payments shall each be in an amount determined in accordance with the Note and Mortgage executed by the Contractor in favor of the City.

17.4.1.3 In the event the Contractor files for bankruptcy under Chapter 13 of Title 11, United States Code in addition to the foregoing provisions, the Contractor agrees to cure any amounts in arrears over a period not to exceed twenty-four (24) months from the date of the confirmation order, and such payments shall be made in addition to the regular monthly payments required by the Note and mortgage. Additionally, the Contractor shall agree that the City is over secured and, therefore, entitled to interest and attorney's fees pursuant to 11 U.S.C. 506(b). Such fees shall be allowed and payable as an administrative expense. Further, in the event the Contractor has less than five (5) years of payments remaining on the Note, the Contractor agrees that the treatment afforded to the claim of the City under any confirmed plan of reorganization shall provide that the remaining payments shall be satisfied in accordance with the Note, and that the remaining payments or claim shall not be extended or amortized over a longer period than the time remaining under the Note.

17.4.2 Should this Agreement be entered into and fully executed by the parties, and the funds have not been forwarded to Contractor, the following shall occur:

17.4.2.1 In the event the Contractor files a voluntary petition pursuant to 11 U.S.C. 301 or 302, or an order for relief is entered under 11 U.S.C. 303., the Contractor acknowledges that the commencement of a bankruptcy proceeding constitutes an event of default under the terms of this Agreement. Further, the Contractor acknowledges that this Agreement constitutes an executory contract within the meaning of 11 U.S.C. 365. The Contractor acknowledges that this Agreement is not capable of being assumed pursuant to 11 U.S.C. 365(c)(2), unless the

City expressly consents in writing to the assumption. In the event the City consents to the assumption, the Contractor agrees to file a motion to assume this Agreement within ten (10) days after receipt of written consent from the City, regardless of whether the bankruptcy proceeding is pending under Chapter 7, 11, or 13 of Title 11 of the United States Code. The Contractor further acknowledges that this Agreement is not capable of being assigned pursuant to 11 U.S.C. 365(b)(1).

- 17.5 Termination for Convenience: This Contract may be terminated for convenience in writing by City upon thirty (30) days written notice to Contractor (delivered by certified mail, return receipt requested) of intent to terminate and the date on which such termination becomes effective. In such case, Contractor shall be paid for all work executed and expenses incurred prior to termination in addition to termination settlement costs reasonably incurred by Contractor relating to commitments which had become firm prior to the termination. Payment shall include reasonable profit for work/services satisfactorily performed. No payment shall be made for profit for work/services which have not been performed.
- 17.6 Where the Contractor's service have been so terminated by the City, the termination shall not affect any rights of the City against the Contractor then existing or which may thereafter accrue. Any retention or payment of moneys due the Contractor by the City will not release the Contractor from liability.
- 17.7 The Contractor has no right, authority or ability to terminate the Work except for the wrongful withholding of any payments due the Contractor from the City.

## ARTICLE 18 – DISPUTE RESOLUTION

- 18.1 Resolution of Disputes: Questions, claims, difficulties and disputes of whatever nature which may arise relative to the technical interpretation of the Contract Documents and fulfillment of this Agreement as to the character, quality, amount and value of any work done and materials furnished, or proposed to be done or furnished under or, by reason of, the Contract Documents which cannot be resolved by mutual agreement of Contract Administrator and Contractor shall be submitted to the Consultant for resolution. When either party has determined that a disputed question, claim, difficulty or dispute is at an impasse, that party shall notify the other party in writing and submit the question, claim, difficulty or dispute to the Consultant for resolution. The parties may agree to a proposed resolution at any time without the involvement and determination of the Consultant.
- 18.1.1 Consultant shall notify Contract Administrator and Contractor in writing of Consultant's decision within twenty-one (21) calendar days from the date of the submission of the question, claim, difficulty or dispute, unless Consultant requires time to gather information or allow the parties to provide additional information.
- 18.1.2 In the event the determination of a dispute by the Consultant under this Article is unacceptable to any of the parties hereto, the party objecting to the determination must notify the other party and the City Manager, in writing within ten (10) days after receipt of the determination. The notice must state

the basis of the objection and the proposed resolution. Final resolution of such dispute shall be made by the City Manager. The City Manager’s decision shall be final and binding on the parties.

18.1.3 All non-technical administrative disputes (such as billing and payment) shall be determined by Contract Administrator.

18.1.4 During the pendency of any dispute and after a determination thereof, Contractor, Consultant, and Contract Administrator shall act in good faith to mitigate any potential damages including utilization of construction schedule changes and alternate means of construction. During the pendency of any dispute arising under this Agreement, other than termination herein, Contractor shall carry on the Work and adhere to the progress schedule. The Work shall not be delayed or postponed pending resolution of any disputes or disagreements.

18.1.5 For any disputes which remain unsolved, within sixty (60) calendar days after Final Completion of the Work, the parties shall participate in mediation to address all unresolved disputes. A mediator shall be mutually agreed upon by the parties. Should any objection not be resolved in mediation, the parties retain all their legal rights and remedies under applicable law. If a party objecting to a determination, fails to comply in strict accordance with the requirements of this Article, said party specifically waives all of its rights provided hereunder, including its rights and remedies under applicable law.

**ARTICLE 19 – NOTICES**

19.1 All notices required by any of the Contract Documents shall be in writing and shall be deemed delivered upon mailing by certified mail, return receipt requested to the following:

To the City:

City Manager  
City of Fort Lauderdale  
100 North Andrews Avenue  
Fort Lauderdale, Florida 33301

with copy to the:

Project Manager and City Attorney  
City of Fort Lauderdale  
100 North Andrews Avenue  
Fort Lauderdale, Florida 33301

To the Contractor:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## ARTICLE 20 – LIMITATION OF LIABILITY

- 20.1 The City desires to enter into this Agreement only if in so doing the City can place a limit on the City's liability for any cause of action arising out of this Agreement, so that the City's liability for any breach never exceeds the sum of \$1,000. For other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Contractor expresses its willingness to enter into this Agreement with the knowledge that the Contractor's recovery from the City to any action or claim arising from the Agreement is limited to a maximum amount of \$1,000, which amount shall be reduced by the amount actually paid by the City to the Contractor pursuant to this Agreement, for any action or claim arising out of this Agreement. Nothing contained in this paragraph or elsewhere in this Agreement is in any way intended either to be a waiver of the limitation placed upon the City's liability as set forth in Section 768.28, Florida Statutes, or to extend the City's liability beyond the limits established in said Section 768.28; and no claim or award against the City shall include attorney's fees, investigative costs, expert fees, suit costs or pre-judgment interest.
- 20.2 No Extended Damages: For other and additional good and valuable consideration the receipt and sufficiency of which is hereby acknowledged, the Contractor covenants and agrees that in the event of any delay of construction or for any reason, allegation or claim, and notwithstanding the reason of the delay, reason, claim or allegation or who caused them or the construction delay or whether they were caused by the City, that there will be no entitlement to Contractor to or for any direct or indirect financial damages or losses for extended corporate overhead impact, extended project overhead impacts, project support services, mobilization or demobilization or by whatever other label or legal concept or theory and types of names or labels or basis such claims may have, or any business damages or losses of whatever type or nature, and Contractor hereby waives any right to make any such claim or claims. This provision will have application and effect when construction delays are anticipated and agreed upon by both the City and the Contractor.

## ARTICLE 21 – GOVERNING LAW

- 21.1 This Agreement shall be governed by the laws of the State of Florida. Both Parties agree that the courts of the State of Florida shall have jurisdiction of any claim arising in connection with this Agreement. Venue for any claim, objection or dispute arising out of this Agreement shall be in Broward County, Florida. **By entering into this Contract, Contractor and City hereby expressly waive any rights either party may have to a trial by jury or any civil litigation related to, or arising out of the Project. Contractor shall specifically bind all subcontractors to the provisions of this Contract.**

## ARTICLE 22 – MISCELLANEOUS

- 22.1 The duties and obligations imposed by this Agreement and the rights and remedies available to the parties and, in particular but without limitation, the warranties, guaranties and obligations imposed upon the Contractor and all of the rights and remedies available to the City, are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are

otherwise imposed or available by laws or regulations, by special warranty or guarantee or by other provisions of the Contract Documents, and the provisions of this Paragraph will be as effective as if repeated specifically in the Contract Documents, and the provisions of this Paragraph will survive final payment and termination or completion of this Agreement.

- 22.2 The Contractor shall not assign or transfer this Agreement or its rights, title or interests. The obligations undertaken by the Contractor pursuant to this Agreement shall not be delegated or assigned to any other person or firm. Violation of the terms of this Paragraph shall constitute a material breach of Agreement by the Contractor and the City any, at its discretion, cancel this Agreement and all rights, title and interest of the Contractor which shall immediately cease and terminate.
- 22.3 The Contractor and its employees, volunteers and agents shall be and remain an independent contractors and not agents or employees of the City with respect to all of the acts and services performed by and under the terms of this Agreement. This Agreement shall not in any way be constructed to create a partnership, association or any other kind of joint undertaking or venture between the Parties.
- 22.4 The City reserves the right to audit the records of the Contractor relating in any way to the Work to be performed pursuant to this Agreement at any time during the performance and term of this Agreement and for a period of three (3) years after completion and acceptance by the City. If required by the City, the Contractor agrees to submit to an audit by an independent certified public accountant selected by the City. The Contractor shall allow the City to inspect, examine and review the records of the Contractor at any and all times during normal business hours during the term of this Agreement.
- 22.5 The remedies expressly provided in this Agreement to the City shall not be deemed to be exclusive but shall be cumulative and in addition to all other remedies in favor of the City now or later existing at law or in equity.
- 22.6 Should any part, term or provisions of this Agreement be decided by the courts to be invalid, illegal or in conflict with any state or federal law, the validity of the remaining portion or provision shall not be affected.
- 22.7 Scrutinized Companies: Subject to *Odebrecht Construction, Inc., v. Prasad*, 876 F.Supp.2d 1305 (S.D. Fla. 2012), *affirmed*, *Odebrecht Construction, Inc., v. Secretary, Florida Department of Transportation*, 715 F.3d 1268 (11th Cir. 2013), with regard to the "Cuba Amendment," the Contractor certifies that it is not on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List or the Scrutinized Companies that Boycott Israel List created pursuant to Section 215.4725, Florida Statutes (2016), that it is not engaged in a boycott of Israel, and that it does not have business operations in Cuba or Syria, as provided in section 287.135, Florida Statutes (2016), as may be amended or revised. The City may terminate this Agreement at the City's option if the Contractor is found to have submitted a false certification as provided under subsection (5) of section 287.135, Florida Statutes (2016), as may be amended or revised, or been placed on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List or the Scrutinized Companies that Boycott Israel List created pursuant to Section

215.4725, Florida Statutes (2016), or is engaged in a boycott of Israel or has been engaged in business operations in Cuba or Syria, as defined in Section 287.135, Florida Statutes (2016), as may be amended or revised.

- 22.8 Public Entity Crimes: In accordance with the Public Crimes Act, Section 287.133, Florida Statutes, a person or affiliate who is a contractor, consultant or other provider, 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 the City, may not submit a bid on a contract with the City for the construction or repair of a public building or public work, may not submit bids on leases of real property to the City, may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with the City, and may not transact any business with the City in excess of the threshold amount provided in Section 287.017, Florida Statutes, for category two purchases for a period of thirty-six (36) months from the date of being placed on the convicted vendor list. Violation of this section by Contractor shall result in cancellation of the City purchase and may result in Contractor debarment.
- 22.9 Attorney Fees: If CITY or CONSULTANT incurs any expense in enforcing the terms of this Agreement through litigation, the prevailing party in that litigation shall be reimbursed for all such costs and expenses, including but not limited to court costs, and reasonable attorney fees incurred during litigation.

22.10 Public Records

**IF THE CONTRACTOR HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO THE CONTRACTOR'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS CONTRACT, CONTACT THE CUSTODIAN OF PUBLIC RECORDS AT [PRRCONTRACT@FORTLAUDERDALE.GOV](mailto:PRRCONTRACT@FORTLAUDERDALE.GOV), 954-828-5002, CITY CLERK'S OFFICE, 100 N. ANDREWS AVENUE, FORT LAUDERDALE, FLORIDA 33301.**

Contractor shall:

1. Keep and maintain public records that ordinarily and necessarily would be required by the City in order to perform the service.
2. Upon request from the City's custodian of public records, provide the City with a copy of the requested records or allow the records to be inspected or copied within a reasonable time at a cost that does not exceed the cost provided in Chapter 119, Florida Statutes (2016), as may be amended or revised, or as otherwise provided by law.
3. Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law for the duration of the contract term and following completion of this contract if the Contractor does not transfer the records to the City.
4. Upon completion of the Contract, transfer, at no cost, to the City all public records in possession of the Contractor or keep and maintain public records required by the

City to perform the service. If the Contractor transfers all public records to the City upon completion of this Contract, the Contractor shall destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. If the Contractor keeps and maintains public records upon completion of this Contract, the Contractor shall meet all applicable requirements for retaining public records. All records stored electronically must be provided to the City, upon request from the City's custodian of public records, in a format that is compatible with the information technology systems of the City.

SAMPLE CONSTRUCTION AGREEMENT

Project Name  
(Contractor)  
Project #

**CITY**

IN WITNESS OF THE FOREGOING, the parties have set their hands and seals the day and year first above written.

CITY OF FORT LAUDERDALE, a municipal corporation of the State of Florida

By: \_\_\_\_\_  
LEE R. FELDMAN, City Manager

(CORPORATE SEAL)

ATTEST:

By: \_\_\_\_\_  
JEFFREY A. MODARELLI  
City Clerk

Approved as to Legal Form:

By: \_\_\_\_\_  
RHONDA MONTOYA HASAN  
Assistant City Attorney

SAMPLE CONSTRUCTION AGREEMENT

**CONTRACTOR**

WITNESSES:

CONTRACTOR.,  
a Florida corporation.

\_\_\_\_\_

By \_\_\_\_\_

\_\_\_\_\_

Print Name

\_\_\_\_\_

PRINT NAME

\_\_\_\_\_

Title

\_\_\_\_\_

ATTEST:

\_\_\_\_\_

Print Name

BY: \_\_\_\_\_

\_\_\_\_\_

PRINT NAME

\_\_\_\_\_

Secretary

(CORPORATE SEAL)

STATE OF FLORIDA:  
COUNTY OF BROWARD:

The foregoing instrument was acknowledged before me this \_\_\_\_ day of \_\_\_\_\_, 2016, by \_\_\_\_\_ (Name), as \_\_\_\_\_ (Title) of \_\_\_\_\_ (CONTRACTOR), a Florida corporation, on behalf of the Corporation.

SEAL

\_\_\_\_\_  
Notary Public, State of Florida

\_\_\_\_\_  
Name of Notary Typed, Printed or Stamped

Personally Known or  Produced Identification:

Type of Identification Produced: \_\_\_\_\_

## **GENERAL CONDITIONS**

**Unless otherwise modified in the projects special conditions, the following General Conditions shall be part of the Contract:**

**GC - 01 - DEFINITIONS** - The following words and expressions, or pronouns used in their stead, shall wherever they appear in the Contract and the Contract Documents, be construed as follows:

"Addendum" or "Addenda" - shall mean the additional Contract provisions issued in writing, by the Engineer, prior to the receipt of bids.

"Bid" – shall mean the offer or proposal of the Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.

"Bidder" – shall mean any person, firm, company, corporation or entity submitting a Bid for the Work.

"Bonds" –shall mean Bid, performance and payment bonds and other instruments of security, furnished by Contractor and his surety in accordance with the Contract Documents.

"City" – shall mean the City of Fort Lauderdale, Florida, a Florida municipal corporation. In the event the City exercises its regulatory authority as a government body, the exercise of such regulatory authority and the enforcement of any rules, regulations, codes, laws and ordinances shall be deemed to have occurred pursuant to City's authority as a governmental body and shall not be attributable in any manner to the City as a party to this Contract. For the purpose of this Contract, "City" without modification shall mean the City Commission, and/or City Manager or his/her designee(s) as applicable.

"Construction Manager" - shall mean the Public Works Director or his/her designee.

"Construction Project Manager" - shall mean the Public Works Director or his/her designee.

"Consultant" – shall mean a person, firm, company, corporation or other entity employed by the City to perform the professional services for the project.

"Contract Work" - shall mean everything expressed or implied to be required to be furnished and furnished by the Contractor by any one or more of the parts of the Contract Documents referred to in the Contract 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 Public Works Director shall determine which shall prevail.

"Design Documents" – shall mean the construction plans and specifications included as part of a Bid/Proposal Solicitation prepared either by the City or by the Consultant under a separate Agreement with the City.

"Engineer" - shall mean the Public Works Director or his/her designee.

"Extra Work" - shall mean work other than that required by the Contract.

"Inspector" – shall mean an authorized representative of the City assigned to make necessary inspections of materials furnished by Contractor and of the Work performed by Contractor.

"Notice" - shall mean written notice sent by certified United States Mail, return receipt requested, or sent by commercial express carrier with acknowledgement of delivery, or via fax or email, or by hand delivery with a request for a written receipt of acknowledgment of delivery and shall be served upon the Contractor either personally or to its place of business listed in the Bid.

"Owner" - shall mean the City of Fort Lauderdale.

"Project Manager" - shall mean the Public Works Director or his/her designee.

"Public Works Director" - shall mean the Public Works Director of the City of Fort Lauderdale, Florida or his/her designee(s).

"Site" - shall mean the area upon or in which the Contractor's operations are carried out and such other areas adjacent thereto as may be designated as such by the Public Works Director.

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

"Surety" - shall mean any corporation or entity that executes, as Surety, the Contractor's performance and payment bond securing the performance of this Contract.

**GC - 02 - SITE INVESTIGATION AND REPRESENTATION** - The Contractor acknowledges that it has satisfied itself as to the nature and location of the Work under the Contract Documents, the general and local conditions of the Site, particularly those bearing upon availability of transportation, disposal, handling and storage of materials, availability of labor, water, electric power, and roads, the conformation and conditions at the ground based on City provided reports, the type of equipment and facilities needed preliminary to and during the prosecution of the Work and all other matters which can in any way affect the Work or the cost thereof under the Contract Documents.

The Contractor acknowledges that it has conducted extensive tests, examinations and investigations and represents and warrants a thorough familiarization with the nature and extent of the Contract Documents, the Work, locality, soil conditions, moisture conditions and all year-round local weather and climate conditions (past and present), and, in reliance on such tests, examination and investigations conducted by Contractor and the Contractor's experts, has determined that no conditions exist that would in any manner affect the Bid Price and that the project can be completed for the Bid Price submitted.

The Contractor, on its own, has made or caused to be made examinations, investigations, tests and studies of reports and related data in addition to those referred above, as Contractor deemed necessary to perform the Work at the Bid price set by the Contractor, within the contract time and in accordance with the other terms and conditions of the Contract Documents and the Bid made by the Contractor; and no additional examinations, investigations, tests, reports or similar data are, or will be, required by Contractor to assure that the Work can be done at the Bid price set by the Contractor.

The Contractor further acknowledges that it has satisfied itself based on any geotechnical reports the City may provide and inspection of the project Site as to the character, quality, and quantity of surface and subsurface materials to be encountered from inspecting the site and from evaluating information derived from exploratory work that may have been done by the City or included in the

Contract Documents and finds and has further determined that no conditions exist that would in any manner affect the Bid price and that the project can be completed for the Bid price submitted..

Any failure by the Contractor to acquaint itself with all the provided information and information obtained by visiting the project Site will not relieve Contractor from responsibility for properly estimating the difficulty or cost thereof under the Contract Documents. In the event that the actual subsurface conditions vary from the actual City provided reports, the Contractor shall notify the City and the Contract amount may be adjusted depending on the conditions, at the approval of the City.

**GC - 03 - SUBSTITUTIONS** - If the Contractor desires to use materials and/or products of manufacturer's names different from those specified in the Contract Documents, the Bidder requesting the substitution shall make written application as described herein. The burden of proving the equality of the proposed substitution rests on the Bidder making the request. To be acceptable, the proposed substitution shall meet or exceed all expressed requirements of the Contract Documents and shall be submitted upon the Contractor's letterhead, in addition to the "Contractor's Request for Substitution" form provided by the Public Works Director. The following requirements shall be met in order for the substitution to be considered:

1. Requests for substitution shall reach the Public Works Director no less than ten (10) Working Days prior to the date set for opening of Bids; and
2. Requests for substitution shall be accompanied by such technical data, as the party making the request desires to submit. The Public Works Director will consider reports from reputable independent testing laboratories, verified experience records from previous users and other written information valid in the circumstances; and
3. Requests for substitution shall completely and clearly indicate in what respects the materials and/or products differ from those indicated in the Contract Documents; and
4. Requests for substitution shall be accompanied by the manufacturer's printed recommendations clearly describing the installation, use and care, as applicable, of the proposed substitutions; and
5. Requests for substitution shall be accompanied by a complete schedule of changes in the Contract Documents, if any, which must be made to permit the use of the proposed substitution; and

If a proposed substitution is approved by the Public Works Director, an Addendum will be issued to prospective bidders not less than three (3) working days prior to the date set for opening of Bids. Unless substitutions are received and approved as described above, the successful Bidder shall be responsible for furnishing materials and products in strict accordance with the Contract Documents.

**GC - 04 - CONTROL OF THE WORK** - The Public Works Director shall have full control and direction of the Work in all respects. The Public Works Director and/or his authorized designee(s) shall, at all times, have the right to inspect the Work and materials. The Contractor shall furnish all reasonable facilities for obtaining such information, as the Public Works Director may desire respecting the quality of the Work and materials and the manner of conducting the Work. Should the Contractor be directed or permitted to perform night Work, or to vary the period which work is ordinarily carried on in the daytime, he shall give ample notice to the Public Works Director so that proper and adequate inspection may be provided. Such Work shall be done only under such regulations as are furnished in writing by the Public Works Director, and no extra compensation shall be allowed to the Contractor therefore. In the event of night work, the Contractor shall furnish

such light, satisfactory to the Public Works Director, as will insure proper inspection. Nothing herein contained shall relieve the Contractor from compliance with any and all City ordinances relating to noise or Work during prohibited hours.

The Contractor shall keep the Public Works Director informed, a reasonable time in advance, as to his need for grades and lines in order that the same may be furnished and all necessary measurements made for records and for payment with the minimum of inconvenience to the Public Works Director or of delay to the Contractor. The Contractor shall submit to the Public Works Director or Inspector on the job a written request outlining the streets, etc., for which the Contractor desires lines and grades. It is the intention not to delay the Work for the giving of lines and grades, but when necessary, work operations shall be suspended for such reasonable time as the Public Works Director may require for this purpose. However, such cost increases shall be authorized either by the City Manager and/or designee, or the City Commission based upon the purchasing threshold amounts provided for in Chapter 2 of the City of Fort Lauderdale's Code of Ordinances.

**GC - 05 - SUBCONTRACTOR** - The Contractor shall not sublet, in whole or any part of the Work without the written consent and approval of the Public Works Director. Within ten (10) days after official notification of starting date, the Contractor must submit in writing, to the Public Works Director, a list of all Subcontractors. No Work shall be done by any Subcontractor until such Subcontractor has been officially approved by the Public Works Director. A subcontractor not appearing on the original list will not be approved without written request submitted to the Public Works Director and approved by the Public Works Director. In all cases, the Contractor shall give his personal attention to the Work of the Subcontractors and the Subcontractor is liable to be discharged by the Contractor, at the direction of the Public Works Director, for neglect of duty, incompetence or misconduct.

Acceptance of any Subcontractor, other person, or organization by the Public Works Director shall not constitute a waiver of any right of Public Works Director to reject defective Work or Work not in conformance with the Contract Documents.

Contractor shall be fully responsible for all acts and omissions of his Subcontractors and of persons and organizations directly or indirectly employed by them and of persons and organizations for whose acts any of them may be liable to the same extent that he is responsible for the acts and omissions of persons directly employed by him. Nothing in the Contract Documents shall create any contractual relationship between City and any Subcontractor or other person or organization having a direct contract with Contractor, nor shall it create any obligation on the part of City to pay or to see to the payment of any moneys due to any Subcontractor or other person, or organization, except as may otherwise be required by law.

**GC - 06 - QUANTITIES** - It is mutually agreed that the proposal shows the approximate amounts only along with the Plans and the general location. It is also mutually agreed that no change will be made involving any departure from the general scheme of the Work and that no such change involving a material change in cost, either to the City or Contractor, shall be made, except upon written permission of the City. However, the Public Works Director shall have the right to make minor alternations in the line, grade, plan, form or materials of the Work herein contemplated any time before the completion of the same. That if such alterations shall diminish the quantity of the Work to be done, such alterations shall not constitute a claim for damages or anticipated profits. That if such alterations increase the amount of the Work to be done, such increase shall be paid for according to the quantity actually performed and at the unit price or prices stipulated therefore in the Contract.

The City shall, in all cases of dispute, determine the amount or quantity of the several kinds of Work which are to be paid for under this Contract, and shall decide all questions relative to the execution of the same, and such estimates and decisions shall be final and binding.

Any Work not herein specified, which might be fairly implied as included in the Contract, of which the City shall judge, shall be done by the Contractor without extra charge. However, such cost increases shall be authorized either by the City Manager and/or designee, or the City Commission based upon the purchasing threshold amounts provided for in Chapter 2 of the City of Fort Lauderdale's Code of Ordinances.

**GC-07 - NO ORAL CHANGES** - Except to the extent expressly set forth in the Contract, no change in or modification, termination or discharge of the Contract in any form whatsoever, shall be valid or enforceable unless it is in writing and signed by the parties charged, therewith or their duly authorized representative.

**GC - 08 - PERMITS AND PROTECTION OF PUBLIC** – Permits on file with the City and or those permits to be obtained shall be considered directive in nature and will be considered a part of this Contract. A copy of all permits shall be given to the City and become part of the Contract Documents. Terms of permits shall be met prior to acceptance of the Work and release of the final payment.

The Contractor shall be required to observe all the ordinances in relation to obtaining permits for occupying, excavating, or in any way obstructing the streets and alleys. He shall erect and maintain barricades and sufficient safeguards around all excavations, embankments or obstructions; he shall place sufficient warning lights at or near the Work; keep the same burning from sunset to sunrise, employ watchmen, and strictly obey all laws and ordinances controlling or limiting those engaged in similar work.

Where there are telephones, light or power poles, water mains, conduits, pipes or drains or other construction, either public or private, in or on the streets or alleys, the Work shall be so conducted that no interruption or delay will be caused in the operation or use of the same. Proper written notice shall be given, and all the facilities, afforded the owners of such construction encountered or likely to be encountered, as will enable them to preserve the same from injury.

The Contractor shall not be permitted to interfere with public travel and convenience by grading or tearing up streets indiscriminately, but the Work of constructing the various items in this contract shall proceed in an orderly, systematic and progressive manner.

Contractor shall not load nor permit any part of any structure to be loaded with weights that will endanger the structure, nor shall he subject any part of the Work to stresses or pressures that will endanger it.

Where lifting operations involving the use of specialized cranes are required as part of construction, Contractor must make undertake the following investigation and submit the results and documentation to the Engineer prior to commencing any lifting operations: marking a very specific area in the field for the placement of the crane; a drawing showing the limitations of the job operation (i.e. not over adjacent properties or pedestrian and high vehicular traffic areas); underground utility exploration in the vicinity of the crane location, which may include ground penetrating radar to identify voids or old pipe or other subsurface features that could lead to sudden failure; assessment of the underlying soil and roadway materials and a worst case analysis based on entire load being distributed on just one or two outriggers; provision of properly sized pads under the outriggers; loading charts from manufacturer showing allowable configurations/loads; and inspection to make sure crane operation is in accordance with the permit conditions.

**GC - 09 - DISEASE REGULATIONS** - The Contractor shall enforce all sanitary regulations and take all precautions against infectious diseases as the Public Works Director may deem necessary. Should any infectious or contagious diseases occur among his employees, he shall arrange for the immediate removal of the employee from the Site and isolation of all persons connected with the Work.

**GC - 10 - CONTRACTOR TO CHECK PLANS, SPECIFICATIONS, AND DATA** - The Contractor shall verify all dimensions, quantities, and details shown on the plans, supplementary drawings, schedules, or other data received from the Public Works Director, and shall notify the Public Works Director of all errors, omissions, conflicts and discrepancies found therein within three (3) working days of discovery. 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 there from nor from rectifying such condition at his own expense.

**GC - 11 - SUPPLEMENTARY DRAWINGS** - When, in the opinion of the Public Works Director, 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 Public Works Director and copies will be given to the Contractor.

The supplementary drawings shall be binding upon the Contractor with the same force as the original Plans. Where such supplementary drawings require either less or more than the estimated quantities of work, credit to the City or compensations therefore to the Contractor shall be subject to the terms of the Contract.

**GC - 12 - MATERIALS AND WORKMANSHIP** - All material and workmanship shall, in every respect, be in conformity with approved modern practice and with prevailing standards of performance and quality. In the event of dispute the Public Works Director's decision shall be final. Wherever the Plans, specifications, Contract Documents, or the directions of the Public Works Director are unclear as to what is permissible and/or fail to note the quality of any Work, that interpretation will be made by the Public Works Director, which is in accordance with approved modern practice, to meet the particular requirements of the Contract.

In all cases, new materials shall be used, unless this provision is waived by notice from the City in writing.

**GC - 13 - 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 re-establishing same if disturbed, or bear the entire expense of rectifying Work improperly installed due to not maintaining or protecting or for removing without authorization, such established points, stakes and marks. The Contractor shall safeguard all existing and known property corners, monuments and marks not related to the Work and, if required, shall bear the cost of having them re-established by a licensed surveyor if disturbed or destroyed during the course of construction.

**GC - 14 - EXISTING UTILITY SERVICE** - All existing utility service shall be maintained with a minimum of interruption at the expense of the Contractor.

**GC - 15 - JOB DESCRIPTION SIGNS** - Contractor, at Contractor's expense, shall furnish, erect, and maintain suitable weatherproof signs on jobs over \$100,000 containing the following information:

1. City Seal (in colors)

2. Project or Improvement Number
3. Job Description
4. Estimated Cost
5. Completion Date

Minimum size of sign shall be four feet high, eight feet wide and shall be suitably anchored. The entire sign shall be painted and present a pleasing appearance. Exact location of signs will be determined in the field. Two (2) signs will be required, one at each end of the job. All costs of this work shall be included in other parts of the work.

**GC - 16 - FLORIDA EAST COAST RIGHT-OF-WAY** - Whenever a City contractor is constructing within the Florida East Coast Railway Company's Right-of-Way, it will be mandatory that the contractor carry separate bodily injury and property damage insurance in the amounts as stated below. This insurance shall be taken out and maintained during the life of the Contract.

Bodily injury insurance in an amount not less than \$500,000.00 for injuries, including wrongful death to any one person, and subject to the same limit for each person, in an amount not less than \$1,000,000.00 on account of any one occurrence, and

Property damage insurance in an amount not less than \$500,000.00 for damages on account of any one occurrence and in an amount not less than \$1,000,000.00 for damages on account of all occurrences.

**GC - 17 - ACCIDENTS** - The Contractor shall provide such equipment and facilities as are necessary and/or required, in the case of accidents, for first aide services to be provided to a person who may be injured during the project duration. The Contractor shall also comply with the OSHA requirements as defined in the United States Labor Code 29 CFR 1926.50.

In addition, the Contractor must report immediately to the Public Works Director every accident to persons or damage to property, and shall furnish in writing full information, including testimony of witnesses regarding any and all accidents.

**GC - 18 - SAFETY PRECAUTIONS** - Contractor must adhere to the applicable environmental protection guidelines for the duration of a project. If hazardous waste materials are used, detected or generated at any time, the Project Manager must be immediately notified of each and every occurrence. The Contractor shall comply with all codes, ordinances, rules, orders and other legal requirements of public authorities (including OSHA, EPA, DERM, the City, Broward County, State of Florida, and Florida Building Code), which bear on the performance of the Work.

The Contractor shall take the responsibility to ensure that all Work is performed using adequate safeguards, including but not limited to: proper safe rigging, safety nets, fencing, scaffolding, barricades, chain link fencing, railings, barricades, steel plates, safety lights, and ladders that are necessary for the protection of its employees, as well as the public and City employees. All riggings and scaffolding shall be constructed with good sound materials, of adequate dimensions for their intended use, and substantially braced, tied or secured to ensure absolute safety for those required to use it, as well as those in the vicinity. All riggings, scaffolding, platforms, equipment guards, trenching, shoring, ladders and similar actions or equipment shall be OSHA approved, as applicable, and in accordance with all Federal, State and local regulations.

**GC - 19 - DUST PREVENTION** - The Contractor shall, by means of a water spray, or temporary asphalt pavement, take all necessary precautions to prevent or abate a dust nuisance arising from dry weather or Work in an incomplete stage. All costs of this Work shall be included in cost of other parts of the Work.

Should the Contractor fail to abate a dust nuisance by the above methods, and then he will be required to immediately construct temporary patches per City standards.

**GC - 20 - PLACING BARRICADES AND WARNING LIGHTS** - The Contractor shall furnish and place, at his own expense, all barricades, warning lights, automatic blinker lights and such devices necessary to properly protect the work and vehicular and pedestrian traffic. Should the Contractor fail to erect or maintain such barricades, warning lights, etc., the Public Works Director may, after 24 hours' notice to the Contractor, proceed to have such barricades and warning lights placed and maintained by City or other forces and all costs incurred thereof charged to the Contractor and may be retained by the City from any monies due, or to become due, to the Contractor.

**GC - 21 - TRAFFIC CONTROL** - The Contractor shall coordinate all Work and obtain, through the Engineering Department, any permits required to detour traffic or close any street before starting to work in the road. The following section: Part VI Traffic Controls for Street and Highway Construction and Maintenance Operations, MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, U.S. Department of Transportation Federal Highway Administration, 2009, or current edition, shall be used as a guide for requirement and placement of traffic control devices, signs and barricades. The Public Works Director shall determine requirements for the above. The above publication is available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. In the event that a Maintenance of Traffic (MOT) Plan is required, the Plan shall be prepared by an A.A.S.T.A. certified technician.

All traffic control devices, flashing lights, signs and barricades shall be maintained in working condition at all times.

**GC - 22 - COORDINATION** - The Contractor shall notify all utilities, transportation department, etc., in writing, with a copy to the Public Works Director before construction is started and shall coordinate his Work with them. The Contractor shall cooperate with the owners of any underground or overhead utility lines in their removal, construction and rearrangement operations in order that services rendered by these parties will not be unnecessarily interrupted.

The Contractor shall arrange his Work and dispose of his materials so as to not interfere with the operation of other Contractors engaged upon adjacent work and to join his Work to that of others in a proper manner and to perform his Work in the proper sequence in relation to that of other Contractors all as may be directed by the Public Works Director.

Each Contractor shall be responsible for any damage done by him or his agents to the work performed by another Contractor.

The Contractor shall contact the Broward County Transportation Department and the Florida Department of Transportation, as applicable, to verify and obtain location of any and all traffic conduits, loops, and street light underground services.

**GC - 23 - WATER** - Bulk water used for construction, flushing pipelines, and testing shall be obtained from fire hydrants. Contractor shall make payment for hydrant meter at Treasury Billing Office, 1st Floor, City Hall, 100 N. Andrews Avenue. With the paid receipt, contractor can pick up hydrant meter at the utility location office. No connection shall be made to a fire hydrant without a meter connected.

**GC - 24 - PROHIBITION AGAINST CONTRACTING WITH SCRUTINIZED COMPANIES** - Subject to *Odebrecht Construction, Inc., v. Prasad*, 876 F.Supp.2d 1305 (S.D. Fla. 2012), *affirmed, Odebrecht Construction, Inc., v. Secretary, Florida Department of Transportation*, 715 F.3d 1268 (11th Cir. 2013), with regard to the “Cuba Amendment,” the Contractor certifies that it is not on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List or the Scrutinized Companies that Boycott Israel List created pursuant to Section 215.4725, Florida Statutes (2016), that it is not engaged in a boycott of Israel, and that it does not have business operations in Cuba or Syria, as provided in section 287.135, Florida Statutes (2016), as may be amended or revised. The City may terminate this Agreement at the City’s option if the Contractor is found to have submitted a false certification as provided under subsection (5) of section 287.135, Florida Statutes (2016), as may be amended or revised, or been placed on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List or the Scrutinized Companies that Boycott Israel List created pursuant to Section 215.4725, Florida Statutes (2016), or is engaged in a boycott of Israel or has been engaged in business operations in Cuba or Syria, as defined in Section 287.135, Florida Statutes (2016), as may be amended or revised.

**GC - 25 - LOCATION OF UNDERGROUND FACILITIES** - If the Proposer, for the purpose of responding to this solicitation, requests the location of underground facilities through the Sunshine State One-Call of Florida, Inc. notification system or through any person or entity providing a facility locating service, and underground facilities are marked with paint, stakes or other markings within the City pursuant to such a request, then the Proposer shall be deemed non-responsive to this solicitation in accordance with Section 2-184(5) of the City of Fort Lauderdale Code of Ordinances.

**GC - 26 – USE OF FLORIDA LUMBER TIMBER AND OTHER FOREST PRODUCTS** - In accordance with Florida Statute 255.20 (3), The City specifies that lumber, timber, and other forest products used for this project shall be produced and manufactured in the state of Florida if such products are available and their price, fitness, and quality are equal. This requirement does not apply to plywood specified for monolithic concrete forms, if the structural or service requirements for timber for a particular job cannot be supplied by native species, or if the construction is financed in whole or in part from federal funds with the requirement that there be no restrictions as to species or place of manufacture.

The Bidder affirms by submitting a bid response to this solicitation that they will comply with section 255.20 (3) Florida Statutes.

**GC – 27 – PUBLIC RECORDS/TRADE SECRETS/COPYRIGHT:** The Proposer’s response to the Solicitation is a public record pursuant to Florida law, which is subject to disclosure by the City under the State of Florida Public Records Law, Florida Statutes Chapter 119.07 (“Public Records Law”). The City shall permit public access to all documents, papers, letters or other material submitted in connection with this Solicitation and the Contract to be executed for this Solicitation, subject to the provisions of Chapter 119.07 of the Florida Statutes.

Any language contained in the Proposer’s response to the Solicitation purporting to require confidentiality of any portion of the Proposer’s response to the Solicitation, except to the extent that certain information is in the City’s opinion a Trade Secret pursuant to Florida law, shall be void. If a Proposer submits any documents or other information to the City which the Proposer

claims is Trade Secret information and exempt from Florida Statutes Chapter 119.07 ("Public Records Laws"), the Proposer shall clearly designate that it is a Trade Secret and that it is asserting that the document or information is exempt. The Proposer must specifically identify the exemption being claimed under Florida Statutes 119.07. The City shall be the final arbiter of whether any information contained in the Proposer's response to the Solicitation constitutes a Trade Secret. The City's determination of whether an exemption applies shall be final, and the proposer agrees to defend, indemnify, and hold harmless the City and the City's officers, employees, and agent, against any loss or damages incurred by any person or entity as a result of the City's treatment of records as public records. Proposals purporting to be subject to copyright protection in full or in part will be rejected.

EXCEPT FOR CLEARLY MARKED PORTIONS THAT ARE BONA FIDE TRADE SECRETS PURSUANT TO FLORIDA LAW, DO NOT MARK YOUR RESPONSE TO THE SOLICITATION AS PROPRIETARY OR CONFIDENTIAL. DO NOT MARK YOUR RESPONSE TO THE SOLICITATION OR ANY PART THEREOF AS COPYRIGHTED.

**IF THE CONTRACTOR HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO THE CONTRACTOR'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS CONTRACT, CONTACT THE CUSTODIAN OF PUBLIC RECORDS AT:**

**Telephone Number:** (954) 828-5002

**Mailing Address:** City Clerk's Office  
100 N. Andrews Avenue  
Fort Lauderdale, FL 33301

**E-mail:** [prcontract@fortlauderdale.gov](mailto:prcontract@fortlauderdale.gov)

Contractor shall:

1. Keep and maintain public records that ordinarily and necessarily would be required by the City in order to perform the service.
2. Upon request from the City's custodian of public records, provide the City with a copy of the requested records or allow the records to be inspected or copied within a reasonable time at a cost that does not exceed the cost provided in Chapter 119, Florida Statutes (2016), as may be amended or revised, or as otherwise provided by law.
3. Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law for the duration of the contract term and following completion of this contract if the Contractor does not transfer the records to the City.
4. Upon completion of the Contract, transfer, at no cost, to the City all public records in possession of the Contractor or keep and maintain public records required by the City to perform the service. If the Contractor transfers all public records to the City upon completion of this Contract, the Contractor shall destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure

requirements. If the Contractor keeps and maintains public records upon completion of this Contract, the Contractor shall meet all applicable requirements for retaining public records. All records stored electronically must be provided to the City, upon request from the City's custodian of public records, in a format that is compatible with the information technology systems of the City.

**TECHNICAL SPECIFICATIONS**



**DIVISION 1**  
**GENERAL REQUIREMENTS**



## PROJECT 11887

## SECTION 01010 – SUMMARY OF WORK

PART 1 -- GENERAL

## 1.01 GENERAL

- A. The Work to be performed under this Contract shall consist of furnishing all equipment, materials, supplies, and manufactured articles and for furnishing all transportation and services, including fuel, power, water, and essential communications, and for the performance of all labor, work, or other operations required for the fulfillment of the Contract in strict accordance with the Contract Documents. The Work shall be complete, and all work, materials, and services not expressly shown or called for in the Contract Documents which may be necessary for the complete and proper construction of the Work in good faith shall be performed, furnished, and installed by the CONTRACTOR as though originally so specified or shown, at no increase in cost to the CITY.
- B. Wherever the Contract Documents address a third party, i.e., subcontractor, manufacturer, etc., it is to be considered as the CONTRACTOR through the third party.
- C. Wherever a reference to number of days is noted, it shall be construed to mean calendar days.
- D. In order to supplement the services being provided by the ENGINEER, the CITY intends to utilize the services of a third party firm hired by the CONTRACTOR for the review of surface preparation and coatings application. The CONTRACTOR shall provide and properly maintain all necessary safety equipment for the complete review of the work by the CITY, ENGINEER and third party firm.

## 1.02 WORK COVERED BY CONTRACT DOCUMENTS

- A. The Work of the Contract consists of the repair of the elevated water storage tank. The work set forth within these bid documents includes the furnishing of all labor, materials, equipment, services and incidentals for the mechanical repair of the existing steel 1,000,000 gallon elevated storage tank along with the blasting and recoating of the exterior and interior surfaces of the tank and tower.
- B. All work shall be in compliance with all applicable federal, state and local laws and regulations, including those for materials which contain lead. All work shall meet OSHA compliance.
- C. The Second Avenue Elevated Water Storage Tank is located within the City of Fort Lauderdale, Florida at 631 Northwest 2nd Avenue.
- D. In addition to the Contract Agreement, the Contract Documents also include the following four (4) volumes of documents that have been prepared by two consultants for this project:

Volume A – Drawings Prepared by Hazen and Sawyer

Volume B – Bidding and Contract Requirements and Specifications prepared by Hazen and Sawyer

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Volume C – Drawings prepared by Art Light Space

Volume D – Specifications prepared by Art Light Space

### 1.03 CONTRACTOR'S USE OF PROJECT SITE

- A. The CONTRACTOR's use of the project site shall be limited to its construction operations, including on-site storage of materials, on-site fabrication facilities, and field offices

### 1.04 CITY'S USE OF THE PROJECT SITE

- A. The CITY may utilize all or part of the existing facilities during the entire period of construction for the conduct of the CITY's normal operations. The CONTRACTOR shall cooperate with the CITY to minimize interference with the CONTRACTOR's operations and to facilitate the CITY's operations.

### 1.05 PERMITS

- A. It shall be the CONTRACTOR's responsibility to secure all permits of every description required to initiate and complete the work under this contract, except permits obtained by the CITY.
- C. The ENGINEER will furnish signed and sealed sets of Contract Documents to the CONTRACTOR for permit acquisition as required.
- D. The CONTRACTOR shall furnish to the ENGINEER copies of all permits prior to commencement of work requiring permits.
- E. No payments will be made for work completed without first acquiring and furnishing two copies of each permit to the ENGINEER.

### 1.06 SITE CONDITIONS

- A. The CONTRACTOR acknowledges that it has investigated prior to bidding and satisfied itself as to the conditions affecting the work, including but not restricted to those bearing upon transportation, disposal, handling and storage of materials, availability of labor, water, electric power, roads and uncertainties of weather, river stages, tides, water tables or similar physical conditions at the site, the conformation and conditions of the ground, the character of equipment and facilities needed preliminary to and during prosecution of the work. The CONTRACTOR further acknowledges that it has satisfied itself as to the character, quality and quantity of surface and subsurface materials or obstacles to be encountered insofar as this information is reasonably ascertainable from an inspection of the site, or any contiguous site, as well as from information presented by the Drawings and Specifications made a part of this Contract, or any other information made available to it prior to receipt of Bids. Any failure by the CONTRACTOR to acquaint itself with the available information will not relieve it from responsibility for estimating properly the difficulty or cost of successfully performing the work. The CITY assumes no responsibility for any conclusions or interpretations made by the CONTRACTOR on the basis of the information made available by the CITY.

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## 1.07 DIMENSIONS OF EXISTING FACILITIES

- A. Dimensions of existing facilities is based on plans from the original tank construction. As such, these dimensions are considered to be approximate. Where the dimensions and locations of existing improvements are of critical importance in the installation or connection of new work, the CONTRACTOR shall verify such dimensions and locations in the field prior to the fabrication and/or installation of materials or equipment, which are dependent on the correctness of such information.

## 1.08 LAYOUT

- A. All work under this Contract shall be constructed in accordance with the lines and grades shown on the Drawings or as indicated by the ENGINEER. Elevation of existing ground and appurtenances are believed to be reasonably correct based on the tank construction drawings from 1950 and are not guaranteed to be absolute and therefore are presented only as an approximation. Any error or apparent discrepancy in the data shown or omissions of data required for accurately accomplishing the work shall be referred immediately to the ENGINEER for interpretation or correction.
- B. At completion of the work, the CONTRACTOR shall furnish Record Drawings indicating the final layout of all appurtenances, etc. The Record Drawings shall indicate all critical elevations of piping, structures, etc.

## 1.09 FIRE PROTECTION

- A. CONTRACTOR shall take all necessary precautions to prevent fires at or adjacent to the work, buildings, etc., and shall provide adequate facilities for extinguishing fires which do occur.
- B. When fire or explosion hazards are created in the vicinity of the work as a result of the locations of fuel tanks, or similar hazardous utilities or devices, the CONTRACTOR shall immediately alert the local Fire Marshal, the ENGINEER, and the CITY of such tank or device. The CONTRACTOR shall exercise all safety precautions and shall comply with all instructions issued by the Fire Marshal and shall cooperate with the CITY of the tank or device to prevent the occurrence of fire or explosion.

## 1.10 FIRST AID FACILITIES AND ACCIDENTS

- A. First Aid Facilities: The CONTRACTOR shall provide at the site such equipment and facilities as are necessary to supply first aid to any of his personnel who may be injured in connection with the work.
- B. Accidents: The CONTRACTOR shall promptly report, in writing, to the ENGINEER and CITY all accidents whatsoever out of, or in connection with, the performance of the work, whether on or adjacent to the site, which cause death, personal injury or property damage, giving full details and statements of witnesses.
- C. If death, serious injuries, or serious damages are caused, the accident shall be reported immediately by telephone or messenger to both the CITY and the ENGINEER.

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- D. If any claim is made by anyone against the CONTRACTOR or a subcontractor on account of any accidents, the CONTRACTOR shall promptly report the facts, in writing, to the ENGINEER and CITY, giving full details of the claim.
- 1.11 ULTIMATE DISPOSITION OF CLAIMS BY ONE CONTRACTOR ARISING FROM ALLEGED DAMAGE BY ANOTHER CONTRACTOR
- A. During the progress of the work, other contractors may be engaged in performing other work or may be awarded other contracts for additional work on this project. In that event, the CONTRACTOR shall coordinate the work to be done hereunder with the work of such other contractors and the CONTRACTOR shall fully cooperate with such other contractors and carefully fit its own work to that provided under other contracts as may be directed by the CITY. The CONTRACTOR shall not commit or permit any act which will interfere with the performance of work by any other contractor.
- B. If the ENGINEER shall determine that the CONTRACTOR is failing to coordinate his work with the work of the other contractors as identified by the ENGINEER, then the CITY shall have the right to withhold any payments otherwise due hereunder until the CONTRACTOR completely complies with the ENGINEER's directions.
- C. If the CONTRACTOR notifies the CITY in writing that another contractor is failing to coordinate his work with the work of this Contract as directed, the CITY will promptly investigate the charge. If the CITY finds it to be true, he will promptly issue such directions to the other contractor with respect thereto as the situation may require. The CITY, the ENGINEER, nor any of their agents shall not, however, be liable for any damages suffered by the CONTRACTOR by reason of the other contractor's failure to promptly comply with the directions so issued by the CITY, or by reason of another contractor's default in performance, it being understood that the CITY does not guarantee the responsibility or continued efficiency of any contractor.
- D. The CONTRACTOR shall indemnify and hold the CITY and the ENGINEER harmless from any and all claims of judgments for damages and from costs and expenses to which the CITY may be subjected or which it may suffer or incur by reason of the CONTRACTOR's failure to comply with the CITY's directions promptly.
- E. Should the CONTRACTOR sustain any damage through any act or omission of any other contractor having a contract with the CITY for the performance of work upon the site or of work which may be necessary to be performed for the proper execution of the work to be performed hereunder, or through any act or omission of a subcontractor of such contract, the CONTRACTOR shall have no claim against the CITY and the ENGINEER for such damage, but shall have a right to recover such damage from the other contractor under the provision similar to the following provisions which have been or will be inserted in the contracts with such other contractors.
- F. Should any other contractor having or who shall hereafter have a contract with the CITY for the performance of work upon the site sustain any damage through any act or omission of the CONTRACTOR hereunder or through any act or omission of any subcontractor of the CONTRACTOR, the CONTRACTOR agrees to reimburse such other contractor for all such damages and to defend at his own expense any suit based upon such claim and if any judgment or claims against the CITY shall be allowed, the CONTRACTOR shall pay or

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satisfy such judgment or claim and pay all costs and expenses in connection therewith and shall indemnify and hold the CITY harmless from all such claims.

- G. The CITY's right to indemnification hereunder shall in no way be diminished, waived or discharged, by its recourse to assessment of liquidated damages as provided in the Contract, or by the exercise of any other remedy provided for by Contract Documents or by law.

#### 1.12 BLASTING AND EXPLOSIVES

- A. The use of explosives shall not be allowed.

#### 1.13 WEATHER CONDITIONS

- A. No work shall be done when the weather is unsuitable. The CONTRACTOR shall take necessary precautions (in the event of impending storms) to protect all work, materials, or equipment from damage or deterioration due to floods, driving rain, or wind. The CITY reserves the right, through the opinion of the ENGINEER, to order that additional protection measures over and beyond those proposed by the CONTRACTOR, be taken to safeguard all components of the Project. The CONTRACTOR shall not claim any compensation for such precautionary measures so ordered, nor claim any compensation from the CITY for damage to the work from weather elements.

#### 1.14 PERIODIC CLEANUP: BASIC SITE RESTORATION

- A. During construction, the CONTRACTOR shall regularly remove from the site of the work all accumulated debris and surplus materials of any kind which result from his operations. Unused equipment and tools shall be stored at the CONTRACTOR's yard or base of operations for the Project.
- B. The CONTRACTOR shall perform the cleanup work on a regular basis and as frequently as ordered by the CITY. Basic site restoration in a particular area shall be accomplished immediately following the installation or completion of the required facilities in that area. Furthermore, such work shall also be accomplished, when ordered by the CITY, if partially completed facilities must remain incomplete for some time period due to unforeseen circumstances.
- C. The CONTRACTOR shall be responsible for maintaining the project site's landscaping from the time of mobilization to the time of demobilization. Landscape maintenance includes periodic mowing the grass, weekly or as necessary such that the site does not look "weedy" or overgrown, and trimming of shrubs as necessary to maintain a neat appearance. The CONTRACTOR shall replace any landscaping damaged by their actions.
- C. Upon failure of the CONTRACTOR to perform periodic cleanup and basic restoration of the site to the CITY's satisfaction, the CITY may, upon five days prior written notice to the CONTRACTOR, without prejudice to any other rights or remedies of the CITY, cause such work for which the CONTRACTOR is responsible to be accomplished to the extent deemed necessary by the CITY, and all costs resulting therefrom shall be charged to the CONTRACTOR and deducted from the amounts of money that may be due him.

#### 1.15 USE OF FACILITIES BEFORE COMPLETION

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- A. The CITY reserves the right to enter and use any portion of the constructed facilities before final completion of the whole work to be done under this Contract. However, only those portions of the facilities which have been completed to the CITY's satisfaction, as evidenced by his issuing a Certificate of Substantial Completion covering that part of the work, shall be placed in service.
- B. It shall be the CITY's responsibility to prevent premature connections to or use of any portion of the installed facilities by private or public parties, persons or groups of persons, before the ENGINEER issues his Certificate of Substantial Completion covering that portion of the work to be placed in service.
- C. Consistent with the approved progress schedule, the CONTRACTOR shall cooperate with the CITY, his agents, and the ENGINEER to accelerate completion of those facilities, or portions thereof, which have been designated for early use by the CITY.

PART 2 -- PRODUCTS (Not Used)

PART 3 -- EXECUTION (Not Used)

- END OF SECTION -

## PROJECT 11887

## SECTION 01011 – SPECIAL BUILDING INSPECTION

PART 1 -- GENERAL

## 1.01 THE REQUIREMENT

- A. The CONTRACTOR shall provide a Special Building Inspector, in accordance with the requirements of the Florida Building Code, to perform all special inspections required by the Building Department with jurisdiction.
- B. All shop and field welds in structural steel shall be visually inspected by an AWS qualified welding inspector. The Contractor shall furnish a letter of certification for each welded connection stating that these requirements have been met.
- C. The Special Inspector shall be a Professional Engineer licensed in the State of Florida.
- D. It is recognized that the scope of services associated with providing the special inspector cannot be quantified until the CONTRACTOR meets with the Building Department with jurisdiction and the Building Department defines the scope of special inspections.
- E. For the purposes of bidding assume an allowance of 40 hours of professional engineering services on a time and material basis for special inspections.
- F. Special Inspector Allowance: The allowance amount for this bid item is to pay for all labor, equipment and materials for all work necessary and required for a licensed Professional Engineer to perform special inspections of the Work. This item includes, but is not limited to performing all special inspections as required by the Florida Building Code and all discretionary special inspections as required by the Building Department with jurisdiction, completion of all inspection reports, and completion/submittal of the Certification of Compliance. The allowance shown on the bid schedule is an estimate of services required. Payment will be based on the actual fee paid directly to the Special Inspector, documented by paid receipts, specifically excluding any labor, mark-up, overhead and profit, administration or other costs involved in obtaining licenses or paying fees. Any portion of this allowance that remains after all authorized payments have been made will be withheld from contract payments and will remain with the CITY.

## 1.02 SPECIAL BUILDING INSPECTOR FORM

- A. Prepare and submit the form for "Special Building Inspector" as required by the Building Department with jurisdiction. The form shall be executed by the Professional Engineer licensed in the state of Florida.
- B. Provide a copy of the form that is submitted to the Building Department to the CITY for informational purposes.

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## 1.03 INSPECTION REPORTS

- A. Prepare a log of all progress reports and inspections related to the Special Inspections required by the Building Official. The log shall be maintained at the job site.
- B. On a weekly basis submit signed and sealed progress reports and inspection reports to the Building Official as required by the Florida Building Code.
- C. Provide copies of the reports that are submitted to the Building Department to the ENGINEER and the CITY for informational purposes.

## 1.04 CERTIFICATION

- A. The Special Inspector shall submit a Certificate of Compliance prior to scheduling the final building inspection in accordance with the Florida Building Code.
- B. The Certificate of Compliance shall state that the work performed by the CONTRACTOR was done in accordance with the applicable portion of the permitted construction documents as delineated in the special building inspection plan.
- C. Furnish a copy of the Certificate of Compliance to the CITY and the ENGINEER.

PART 2 -- PRODUCTS (Not Used)PART 3 -- EXECUTION (Not Used)

- END OF SECTION -

Broward County Board of Rules and Appeals
One North University Drive, 3500-B
Fort Lauderdale, Florida 33324

Effective: June 30, 2015
Telephone: 954.765.4500
Facsimile: 954.765.4504

FORM FOR "SPECIAL BUILDING INSPECTOR"
SECTION 110.10 - BROWARD COUNTY ADMINISTRATIVE CODE
AND THE FLORIDA BUILDING CODE, 5th Edition (2014)

NOTICE TO PROPERTY OWNER:

You are hereby directed in accordance with Section 110.10.1 or 110.10.2 of the Broward County Administrative Code and the Florida Building Code to retain a Special Structural Inspector (A Florida Registered Architect or Licensed Engineer) to perform the following mandatory or discretionary inspections, as outlined in Section 110.10 of the Florida Building Code and submit progress reports, inspections reports, and a Certificate of Compliance to the Building Official as per Sections 110.10.6 and 110.10.7 of the Florida Building Code.

Note: The Building Official determines which discretionary inspections are to be delegated.

DATE: \_\_\_\_\_ IDENTIFICATION, CONTROL OR BUILDING PERMIT # \_\_\_\_\_
PROJECT NAME: \_\_\_\_\_
JOB ADDRESS \_\_\_\_\_ ZIP \_\_\_\_\_
LEGAL DESCRIPTION: \_\_\_\_\_ FOLIO # \_\_\_\_\_

A. MANDATORY INSPECTIONS TYPE BY CODE:

- 1) Precast Concrete Units - Section 110.10.2.1 ..... Yes  No 
2) Reinforced Unit Masonry - Section 110.10.2.2 (per ACI 530.1-13-Level B Quality Assurance)\*
\*unless noted otherwise on plan..... Yes  No 
3) Connections - 110.10.2.3 ..... Yes  No 
4) Metal System Buildings - Section 110.10.2.4 ..... Yes  No 
5) Smoke Control Systems - Section 110.10.2.5 ..... Yes  No

B. DISCRETIONARY INSPECTION TYPE BY BUILDING OFFICIAL:

- 1) Building Structures or part thereof of Unusual Size, Height, Design or Method of Construction and
Critical Structural Connections - Section 110.10.1.1 ..... Yes  No 
2) Windows, Glass Doors and Curtain Walls on buildings over two (2) stories - Section 110.10.1.1 ..... Yes  No 
3) Pile Driving Only - Section 110.10.1.1 ..... Yes  No 
4) Precast Concrete Units - Section 110.10.2.1 ..... Yes  No 
5) Reinforced Unit masonry - Sections 110.10.2.2 ..... Yes  No 
6) Other..... Yes  No

C. MANDATORY DOCUMENTATION

- 1) Inspection schedule stating the specific inspection that will be made and at what phase of construction must be submitted with this application.
2) Progress Report/Inspection reports during construction in accordance with Section 110.10.6.
3) Certificate of Compliance must be submitted prior to the scheduling of the final building inspection, Section 110.10.7.

ACKNOWLEDGMENT

Owner's Signature: \_\_\_\_\_ Permit Holder's Signature: \_\_\_\_\_
Printed Name: \_\_\_\_\_ Printed Name: \_\_\_\_\_
License # (if applicable) \_\_\_\_\_

SPECIAL BUILDING INSPECTOR:

Registered Architect and/or  Licensed Engineer Signature of Special Building Inspector, Embossed Seal AND Date
Printed Name of Special Building Inspector \_\_\_\_\_
Address of Special Building Inspector \_\_\_\_\_
State of Florida Registration # \_\_\_\_\_ Fax # \_\_\_\_\_ Telephone # \_\_\_\_\_
Date: \_\_\_\_\_

Building Official (or designated representative)

\*\*\*BE ADVISED THIS DOES NOT PRECLUDE YOU FROM OTHER MANDATORY INSPECTIONS IN THE CODE\*\*\*

## PROJECT 11887

## SECTION 01012 – SPECIALTY COATINGS INSPECTION SERVICES

PART 1 -- GENERAL

## 1.01 THE REQUIREMENT

- A. The CONTRACTOR shall provide Specialty Coatings Inspection Services through an independent contractor (Specialty Coatings Inspector) that will provide inspection services of proper containment and disposal of lead containing paint, surface preparation, and coatings application for the elevated steel water storage tank in accordance with the terms, conditions, plans, specifications and pertinent regulations. Coating inspectors must have 5 years experience, at a minimum.
- B. The CONTRACTOR shall provide a submittal describing their proposed choice for the Specialty Coatings Inspection Services company to the city for approval. The submittal shall contain resumes and active certifications of current staff, past work by the company, and references from former clients. The CITY prefers references from municipal clients or other governmental agencies. The CITY has right to refuse the CONTRACTOR's selection, if the proposed company's qualifications do not meet requirements specified in this section.
- C. Acceptable companies are Omnitech, LLC, 830 Belle Drive, Breaux Bridge, LA 70517. (337) 315-9564. Attn. Jonathan Parker, President.
- D. The Specialty Coatings Inspector shall be a National Association of Corrosion Engineers (NACE) inspector licensed in the State of Florida. All staff of the Specialty Coatings Inspector providing inspection services on this project shall be NACE certified. In addition, all Specialty Coatings Inspectors inspecting the removal of the existing lead containing paint on the steel water tank shall have QP-1 certification.
- E. All coating application activities shall be observed by the Specialty Coatings Inspector and documented in daily reports provided to the CITY. The Specialty Coatings Inspector shall provide the inspection reports to the CITY no later than two working days after performing each day's inspection.
- F. The Specialty Coatings Inspector shall coordinate on site with the CITY construction manager, inspectors and staff from the CITY's engineering consultant on this project. The ENGINEER will be performing general construction services for the City as identified under a separate agreement. The Specialty Coatings Inspector shall perform the following tasks associated with office administration and field observation activities related to the construction of the project:
  - a. Submittals: The Specialty Coatings Inspector will receive two copies of the coatings submittal from the CITY for review. Review shall be completed within ten (10) working days of Specialty Coating Inspector's receipt of the submittal. One copy of the submittal shall be returned to the CITY for final processing and transmittal to the ENGINEER and the CONTRACTOR. The review shall be for conformance with the design intent and compliance with the information presented in the Contract Documents. The Specialty Coatings Inspector shall determine the acceptability of materials, equipment and methods proposed by the

## PROJECT 11887

- CONTRACTOR. Shop drawing logs, submittal history, review status and related information will be tracked by the ENGINEER.
- b. Pay Requests: The Specialty Coatings Inspector will receive a copy of the CONTRACTOR's monthly payment request from ENGINEER for review with respect to surface preparation and coatings application. The Specialty Coatings Inspector shall meet with the CITY, ENGINEER and CONTRACTOR to discuss the request.
  - c. Conferences and Meetings: The Specialty Coatings Inspector shall attend up to a maximum of fifteen meetings (including the preconstruction conference and bi-weekly progress meetings which will commence after CONTRACTOR mobilizes to the job site). The City will chair the meeting and prepare and issue meeting minutes.
  - d. Construction Observation: The Specialty Coatings Inspector shall conduct on-site observations of construction in progress relating to surface preparation and coatings application. The Specialty Coatings Inspector shall identify to the CITY, CONTRACTOR, and ENGINEER whenever it is believed that any construction is unsatisfactory, faulty or defective or does not conform to the construction contract documents, or does not meet the requirements of any inspections, tests or approval required to be made, or has been damaged before final payment. The Specialty Coatings Inspector shall immediately inform the CITY, CONTRACTOR and ENGINEER upon the commencement of any construction requiring a submittal if the submittal has not been accepted. The Specialty Coatings Inspector shall visually inspect and review suitability and method of storage of materials delivered to the construction site in accordance with the contract documents.
  - e. Daily Log: The Specialty Coatings Inspector shall keep a daily diary relative to surface preparation and coatings application. At a minimum, the log shall include the CONTRACTOR and Specialty Coatings Inspector hours on the job site, weather conditions, data pertaining to questions of extras or deductions, list of visiting officials and representatives of manufacturers, fabricators, suppliers and distributors, daily activities, decisions, observations in general and specific observations in more detail as in observing test procedures. The daily log shall be prepared using specialized forms for coatings observation. PDF copies of the daily logs shall be submitted to the CITY and ENGINEER within two days of the date of observation.
  - f. Coordination: Provide all necessary coordination between CITY, CONTRACTOR, and ENGINEER for successful completion of the Work.
- G. For the purposes of bidding, the CONTRACTOR shall calculate the duration of the scope of services from the CONTRACTOR's schedule for the work, and that duration in days shall be written in the bid form with a daily rate for the Specialty Coatings Inspector. During the project, no increase for the amount for the Specialty Coatings Consultant shall be granted unless for delays approved by the CITY in writing as beyond the CONTRACTOR's control. The CONTRACTOR is to plan and conduct the work such that the Specialty Coatings Inspection Services are needed in full day increments. Partial days of Specialty Coatings Inspection Services are to be discouraged, except when absolutely necessary and approved by the CITY in writing.

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- H. Specialty Coatings Inspection Services: The amount for this bid item is to pay for all labor, equipment and materials for all work necessary and required for a licensed Coatings Inspector to perform specialty coatings inspections of the Work. This item includes, but is not limited to performing all specialty coatings inspections as required by all four volumes of the plans and specifications, completion of all inspection reports, and completion/submittal of the Certification of Compliance. Payment will be based on the actual fee paid directly to the Specialty Coatings Inspector, documented by paid receipts, specifically excluding any labor, mark-up, overhead and profit, administration or other costs involved in obtaining licenses or paying fees. Any portion of this item that remains after all authorized payments have been made will be withheld from contract payments and will remain with the CITY.

## 1.02 SPECIAL COATING INSPECTION FORM

- A. The Specialty Coatings Inspector shall prepare and submit the form for Specialty Coatings Inspections proposed for this project to the CONTRACTOR who will transmit it to the CITY for review. The CITY shall return the form with comments to incorporate for the form to be approved for use. The Specialty Coatings Inspector must revise the form to meet the CITY's requirements. The CITY will provide a copy of the form to the ENGINEER for informational purposes.

## 1.03 INSPECTION REPORTS

- A. The Specialty Coatings Inspector shall prepare a log of all Specialty Coatings Inspections. The log shall be maintained at the job site.
- B. The Specialty Coatings Inspector shall submit signed inspection reports to the CITY within two working days of the date the inspection was performed.

## 1.04 CERTIFICATION

- A. All staff of the Specialty Coatings Inspector performing inspections for this project shall submit copies of current, required certifications at least five working days prior to beginning work.

PART 2 -- PRODUCTS (Not Used)

PART 3 -- EXECUTION (Not Used)

- END OF SECTION -

## PROJECT 11887

## SECTION 01025 – BASIS OF PAYMENT

PART 1 -- GENERAL

## 1.01 THE REQUIREMENT

- A. Payments to the CONTRACTOR shall be made on the basis of the bid items listed on the Proposal Bid Form as full and complete payment for furnishing all supplies, and manufactured articles, materials, incidentals, labor, tools and equipment, and for performing all operations necessary to complete the work in accordance with the requirements of the Contract Documents, including all appurtenances thereto, and including all costs of compliance with the regulations of public agencies having jurisdiction, including Safety and Health Requirements of the Occupational Safety and Health Administration of the U.S. Department of Labor (OSHA). Such compensation shall also include payments for any loss or damages arising directly or indirectly from the work, or from any discrepancies between the actual quantities of work and those shown in the Contract Documents, or from any unforeseen difficulties which may be encountered during the prosecution of the work until the final acceptance by the CITY.
- B. The prices stated in the proposal include full compensation for overhead and profit, all costs and expenses for taxes, labor, equipment, materials, commissions, transportation charges and expenses, patent fees and royalties, labor for handling materials during inspection, furnishing and repairing small tools and ordinary equipment, mobilization, home office expenses and general supervision, bond, insurance, 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 plans and specified herein. In addition, the CONTRACTOR shall include the actual cost of social security taxes, unemployment insurance, worker's compensation, fringe benefits, inclusive of life and health insurance, union dues, pension, pension plans, vacations, and insurance and CONTRACTOR's public liability and property damage insurance involved in the work based on the actual wages paid to such labor and all other general costs and profits, prorated to each item.
- C. Unless otherwise specifically stated elsewhere herein, the CONTRACTOR shall include in the prices bid all materials, electrical supply, fuel, lubricants, temporary equipment, temporary wiring, temporary piping and fittings, pumps, gages, and all other items of whatever nature required to completely test, balance, disinfect if required, and put into fully operational condition all equipment, and/or systems supplied by either the CITY or the CONTRACTOR and installed as a part of this Project. Further, any test materials supplied by the CONTRACTOR shall be completely satisfactory to the CITY. Any decision as to whether a particular material is suitable for test purposes shall be at the sole discretion of the CITY whose decision shall be final. Any material considered not suitable shall be immediately replaced by the CONTRACTOR with suitable material and no extra compensation will be allowed.
- D. The Basis of Payment for an item at the price shown in the Proposal shall be in accordance with its description of the item in this Section and as related to the work specified and as shown on the Drawings. Unit prices, when used, will be applied to the actual quantities furnished and installed in conformance with the Contract Documents.
- E. The CONTRACTOR's attention is called to the fact that the quotations for the various items of work are intended to obtain a complete and working installation under this Contract, and any items of labor, equipment or materials which may reasonably be

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assumed as necessary to accomplish this end shall be supplied whether or not they are specifically shown on the Plans or stated herein. Should the CONTRACTOR feel that the cost of any item of work has not been established by the Proposal or Basis of Payment, they shall include the cost for that work in the last Bid Item for each construction package so that their proposal for the project does reflect their total price for completing the work in its entirety.

- F. The CONTRACTOR shall submit, with each Payment Request, a list of minority-owned business enterprise (MBE) and women-owned business enterprise (WBE) subcontractors that they are or will be utilizing for their contract. For each MBE/WBE Subcontractor, the following information shall be provided:
1. Total sub-contract dollar amount.
  2. Amount paid to date.
- G. Payments will not be made for rejected or unused products (e.g. rejected or remaining materials, material not unloaded, defective work, etc.).
- H. If the bidder makes a mathematical error in the total bid price for the applicable items in the Quotation, the correct sum of its applicable bid item totals shall be the Total Bid.

## 1.02 SUBMITTALS

## A. Informational:

- a. Schedule of Values: Submit schedule on CITY's form.
- b. Application for Payment.
- c. Final Application for Payment.

B. Submittals shall be in accordance with Section 01300 entitled "Submittals."

## 1.03 SCHEDULE OF VALUES

Prepare a schedule of values for the Work.

- A. Unit Price Work: Reflect unit price quantity and price breakdown from conformed Bid Form.
- B. Lump Sum Work:
1. Reflect schedule of values format included in conformed Bid Form.
  2. List Bonds and insurance premiums, mobilization, demobilization, facility startup, and contract closeout separately.
  3. Break down by Divisions 1 through 17 with appropriate subdivision of each Specification.
- C. An unbalanced or front-end loaded schedule will not be acceptable.
- D. Summation of the complete schedule of values representing all the Work shall equal the Contract Price.
- E. The CONTRACTOR shall submit a Schedule of Values for review with the return of the executed Agreement to the CITY. The schedule shall contain the installed value of the component parts of Work for the purpose of making progress payments during the construction period.

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- F. The schedule shall be given in sufficient detail for proper identification of Work accomplished. The Schedule of Values shall directly correlate to each activity outlined in the construction progress schedule and the construction network analysis (specified in the section entitled "Submittals") to accurately relate construction progress to the requested payment. Each item shall include its proportional share of all costs including the CONTRACTOR's overhead, contingencies and profit. The sum of all scheduled items shall equal the total value of the Contract.
- G. If the CONTRACTOR anticipates the need for payment for materials stored on the project site or off-site in bonded warehouse, it shall also submit a separate list covering the cost of materials, delivered and unloaded with taxes paid. This list shall also include the installed value of the item with coded reference to the Work items in the Schedule of Values. Payment for stored materials shall comply with requirements of General Conditions.

## 1.04 APPLICATION FOR PAYMENT (NOT IN TEMPLATE)

- A. Transmittal Summary Form: Attach one Summary Form with each detailed Application for Payment and include Request for Payment of Materials and Equipment on Hand as applicable. Execute certification by authorized officer of CONTRACTOR.
- B. Use detailed Application for Payment Form provided by CITY.
- C. Include accepted schedule of values for each portion of Work and the unit price breakdown for the Work to be paid on unit price basis, and a listing of CITY-selected equipment, if applicable, and allowances, as appropriate.

## Preparation:

1. List each Change Order and Written Amendment executed prior to date of submission as separate line item. Totals to equal those shown on the Transmittal Summary Form.
2. Submit Application for Payment, including a Transmittal Summary Form and detailed Application for Payment Form, a listing of materials on hand as applicable, and such supporting data as may be requested by CITY.

## 1.05 MEASUREMENT – GENERAL

The quantities for payment under this Contract shall be determined by actual measurement of the completed items, in place, ready for service and accepted by the CITY, in accordance with the Schedule of Payment Values as described in Section 00301, unless otherwise specified. A representative of the CONTRACTOR and the CITY shall witness all field measurements.

- A. Weighing, measuring, and metering devices used to measure quantity of materials for the Work shall be suitable for purpose intended and conform to tolerances and Specifications as specified in National Institute of Standards and Technology, Handbook 44.
- B. Whenever pay quantities of material are determined by weight, material shall be weighed on scales furnished by CONTRACTOR and certified accurate by state agency responsible. Weight or load slip shall be obtained from weigher and delivered to CITY or CITY's representative at point of delivery of material.
- C. If material is shipped by rail, car weights will be accepted provided that actual weight of material only will be paid for and not minimum car weight used for assessing freight tariff, and provided further that car weights will not be acceptable for material to be passed through mixing plants.

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Basis of Payment  
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- D. Vehicles used to haul material being paid for by weight shall be weighed empty daily and at such additional times as required by CITY. Each vehicle shall bear a plainly legible identification mark.
- E. Materials that are specified for measurement by the cubic yard measured in the vehicle shall be hauled in vehicles of such type and size that actual contents may be readily and accurately determined. Unless all vehicles are of uniform capacity, each vehicle must bear a plainly legible identification mark indicating its water level capacity. Vehicles shall be loaded to at least their water level capacity. Loads hauled in vehicles not meeting above requirements or loads of a quantity less than the capacity of the vehicle, measured after being leveled off as above provided, will be subject to rejection, and no compensation will be allowed for such material.
- F. Units of measure shown on Bid Form shall be as follows, unless specified otherwise. All methods of measurement shall be approved by the CITY.

Item	Method of Measurement
AC	Acre—Field Measure
CY	Cubic Yard—Field Measure within limits specified or shown, or measured in vehicle by volume, as specified
EA	Each—Field Count
GAL	Gallon—Field Measure
HR	Hour
LB	Pound(s)—Weight Measure by Scale
LF	Linear Foot—Field Measure
LS	Lump Sum—Unit is one; no measurement will be made
SF	Square Foot
SY	Square Yard
TON	Ton—Weight Measure by Scale (2,000 pounds)

1.06 PAYMENT ITEMS

For purposes of describing items appearing in the Bid Schedule, pricing for each item shall include the following work and components in addition to those described for each Item No. below

The price bid shall be full compensation and shall include payment and all labor, equipment, and materials required for a complete, operational, and satisfactory installation, as determined by the CITY Inspector.

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**Item No. 1: Mobilizing / Demobilizing, Bonds, and Insurance**

Payment for mobilization, demobilization, bonds, and insurance will be made at the lump sum price developed from the cost of the unit price items. This item includes, but is not limited to, mobilization to the project site, bonds, videos, insurance, construction trailer (complete) sanitary facilities, labor associated with permit acquisition, CONTRACTOR's staging area, landscape maintenance of the site, project signs, testing, QA/QC, as-built documentation signed and sealed by a Florida licensed Professional Engineer in hardcopy and electronic formats (PDF and AutoCAD), and meeting City standards; project record drawings, project coordination, demobilization, site cleanup and restoration. Partial payments for mobilization and demobilization will be made as follows: Payment shall be 25% of the unit price at the beginning of the work; 50% at 10% project complete; 75% at 25% project complete; and 100% at 100% project complete. The payment items for mobilization shall not exceed 8% of the sum of Bid Items No. 2 through 8. **(Lump Sum)**

**Item No. 2: Pit Filling and Surfacing**

Measurement for payment of Pit Filling and Surfacing will be based upon cost per gallon of epoxy compound material as stated in the Bid. Measurement of quantities will be based on field inspections and measurements performed in the presence of the ENGINEER after areas of the tank are abrasive blasted, rough areas are cleaned, and areas are filled. Note that blasting and cleaning work shall be part of the normal surface preparation and included in the item for All Work Described in the Contract Documents. The ENGINEER shall mark areas requiring pit filling. Areas marked shall be filled with epoxy compound of the type recommended by the coating manufacturer. The epoxy-fairing compound shall be applied neatly and smoothly and rough areas after the repair shall be smoothed prior to coating. **(Gallons)**

**Item No. 3: Pit Welding**

Measurement for payment of Pit Welding will be based upon cost per pit weld repair as stated in the Bid. Measurement of quantities will be based on field inspections performed in the presence of the ENGINEER after areas of the tank are abrasive blasted, rough areas are cleaned, and welding is completed. Note that blasting and cleaning work shall be part of the normal surface preparation and included in the item for All Work Described in the Contract Documents. The ENGINEER shall mark areas requiring pit welding. **(Each)**

**Item No. 4: Seam Welding**

Measurement for payment of Seam welding will be based upon the cost per linear foot of 1/4-inch weld as stated in the Bid. Measurement of quantities will be based on field inspections performed in the presence of the ENGINEER after areas of the tank are abrasive blasted, rough areas are cleaned, and welding is completed. Note that blasting and cleaning work shall be part of the normal surface preparation and included in the item for All Work Described in the Contract Documents. All apparent seam deterioration will be inspected for corrosion and marked by the ENGINEER if requiring welding. **(Linear Foot)**

**Item No. 5: All Work Described in the Contract Documents**

Measurement for payment of All Work Described in the Contract Documents will be based on the actual percent complete of the items listed in the approved schedule of values. This item includes the complete furnishing and installation of all general, civil, mechanical, instrumentation, structural, electrical, landscaping, equipment testing, start-up services, and appurtenant work not covered in another bid item, required for a complete and operable system in accordance with the Contract Documents. **(Lump Sum)**

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**Item No. 6: Specialty Coating Inspection Services**

Measurement for Payment of Specialty Coating Inspection Services will be based on the actual number of days Specialty Coating Inspection Services are performed on the elevated water tank. In the Bid Form, the CONTRACTOR shall provide the number of days of Specialty Coating Inspection Services needed based on the CONTRACTOR's plan for the work. This item includes inspection services on the tank, timely creation and submission of inspection reports, attendance at meetings, review of CONTRACTOR submittals on coating related subjects, review of CONTRACTOR pay applications, attendance at project progress meetings, maintenance of a daily log relative to coatings activities and coordination with the CITY, CONTRACTOR and ENGINEER. **(Day)**

**Item No. 7: Decorative Coating System**

Payment for Decorative Coating System will be based on the actual percent complete of the work. This item includes installation of the Decorative Coating System including the city name and logo, on the entire exterior surface of the water tower, ladders, light fixture supports, railings and conduit. The work includes preparation, installation, touchups, testing, removal of flaws, and cleanup for a complete Decorative Coating System as described in the Contract Documents. **(Lump Sum)**

**Item No. 8: Interactive LED lighting system**

Payment for the Interactive LED Lighting System will be based on the actual percent complete of the work. This item includes furnishing and installing the LED light fixture supports (including priming and painting all but the top decorative coat), the conduit and wire from the lighting control panel to the light fixtures, the light fixtures, conduit and wire from the control panel to the Wi-Fi antenna that controls the lights, Wi-Fi antenna that controls the lights, control panel and contents, remote camera, antenna for the camera signal, conduit and wire to the antenna receiving the camera signal, and all other accessories, testing and startup services and materials necessary to make a complete functioning system in accordance with the Contract Documents. **(Lump Sum)**

**1.07 NONPAYMENT FOR REJECTED OR UNUSED PRODUCTS****A. Payment will not be made for following:**

1. Loading, hauling, and disposing of rejected material.
2. Quantities of material wasted or disposed of in manner not called for under Contract Documents.
3. Rejected loads of material, including material rejected after it has been placed by reason of failure of CONTRACTOR to conform to provisions of Contract Documents.
4. Material not unloaded from transporting vehicle.
5. Defective Work not accepted by the CITY.
6. Material remaining on hand after completion of Work.

**1.08 PARTIAL PAYMENT FOR STORED MATERIALS AND EQUIPMENT**

- A. Partial Payment:** No partial payments will be made for materials and equipment delivered or stored unless Shop Drawings or preliminary operation and maintenance manuals are acceptable to ENGINEER.

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- B. Final Payment: Will be made only for products incorporated in Work; remaining products, for which partial payments have been made, shall revert to CONTRACTOR unless otherwise agreed, and partial payments made for those items will be deducted from final payment.

1.09 ALLOWANCES

- A. The allowances shall be used only at the discretion of and as ordered by the CITY for Special Building Inspection.
- B. Any portion of these allowances that remain after all authorized payments have been made will be withheld from contract payments and will remain with the CITY.

PART 2 -- PRODUCTS (Not Used)

PART 3 -- EXECUTION (Not Used)

- END OF SECTION -

## PROJECT 11887

## SECTION 01040 - COORDINATION

PART 1 -- GENERAL

## 1.01 THE REQUIREMENT

- A. The CONTRACTOR shall allow the CITY or its agents, and other project contactors or their agents, to enter upon the work for the purpose of constructing, operating, maintaining, removing, repairing, altering, or replacing such pipes, sewers, conduits, manholes, wires, poles, or other structures and appliances which may be required to be installed at or in the work. The CONTRACTOR shall cooperate with all aforesaid parties and shall allow reasonable provisions for the prosecution of any other work by the CITY, or others, to be done in connection with his work, or in connection with normal use of the facilities.
- B. Each contractor shall cooperate fully with the CITY, the ENGINEER, and all other contractors employed on the work, to effect proper coordination and progress to complete the project on schedule and in proper sequence. Insofar as possible, decisions of all kinds required from the ENGINEER shall be anticipated by the contractor to provide ample time for inspection, or the preparation of instructions.
- C. Each contractor shall assume full responsibility for the correlation of all parts of his work with that of other contractors. Each contractor's superintendent shall correlate all work with other contractors in the laying out of work. Each contractor shall lay out his own work in accordance with the Drawings, Specifications, and instructions of latest issue and with due regard to the work of other contractors.
- D. Periodic coordinating conferences shall be held in accordance with Section 01200, Project Meetings, of these Contract Documents.

## 1.02 SUBMITTALS

- A. Qualifications: A Statement of Qualifications (SOQ) for professional videographer.
- B. Video Recordings: Two copies of video recordings shall be submitted within five days of being taken.
- A. Photographs: Two copies of color prints and compact discs shall be submitted monthly with payment applications.

## 1.03 UTILITY NOTIFICATION AND COORDINATION

- A. Coordinate the Work with various utilities within Project limits. Notify applicable utilities prior to commencing Work.
  - 1. Contact the City of Fort Lauderdale Public Services Department at 954-828-8000 for water and sewer utility locations.
  - 2. Contact Sunshine State One Call at 811 at least 48 hours prior to any excavation.

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- B. If damage occurs, or if conflicts or emergencies arise during Work, contact the appropriate utility.
1. Fiveash Water Treatment Plant
    - a. Contact Person: Water Facilities Manager
    - b. Telephone: 954-828-7865
  2. Electricity Company: Florida Power and Light.
    - a. Contact Person: Jeff Modlin
    - b. Telephone: 954-321-2258
    - c. Alternate Contact Person: Bret Beck.
    - c. Telephone: 954-717-2082.
  3. Telephone Company: BellSouth.
    - a. Contact Person: Robert Lowen.
    - b. Telephone: 954-423-6235.
  4. Water and Sewer Department: Fort Lauderdale Public Services Department.
    - a. Contact Person: Emergency Hotline.
    - b. Telephone: 954-828-8000.

## 1.04 ADJACENT FACILITIES AND PROPERTIES

- A. Examination: After Effective Date of the Agreement and before Work at site is started, CONTRACTOR shall make a thorough examination of preexisting conditions including existing buildings, structures, and other improvements in vicinity of Work, as applicable, which could be damaged by construction operations. Periodic reexamination shall be jointly performed.
- B. Documentation: Record and submit documentation of observations made on examination inspections in accordance with articles entitled "Construction Photographs" and "Audio-Video Recordings".
- C. Upon receipt, ENGINEER will review, sign, and return one record copy of documentation to CONTRACTOR to be kept on file in field office.
- D. Such documentation shall be used as indisputable evidence in ascertaining whether and to what extent damage occurred as a result of CONTRACTOR's operations, and is for the protection of adjacent property owners, CONTRACTOR, and CITY.

## 1.05 CONSTRUCTION PHOTOGRAPHS

- A. General: Photographically document all unique portions of the work and other work items that will not otherwise be visible after completion of construction. Photographically document other work items that will not otherwise be visible after project completion.
- B. CITY and ENGINEER shall have the right to select the subject matter and vantage point from which photographs are to be taken.
- C. All photographs shall be submitted in both print and digital format.

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- D. Progress Photos: Photographically demonstrate progress of demolition, construction, and painting showing every aspect of site and adjacent properties as well as interior and exterior of impacted structures.
- E. Color Prints:
1. Minimum Size: 4-inch by 6-inch.
  2. Finish: Glossy.
  3. Label Each Print:
    - a. Project Name.
    - b. Date and time photo was taken.
    - c. Photographer's name.
    - d. Caption (maximum 30 characters).
    - e. Location and area designation.
  4. Assemble in bound albums in clear plastic sleeves that facilitate viewing both front and back of each photograph.
- F. Digital Photographs: Format shall be JPG and the minimum size of the camera shall be six megapixel. Photographs shall be made with camera set for the highest resolution. Digital files shall be submitted on labeled compact disks.

## 1.06 AUDIO-VIDEO RECORDINGS

- A. General: Prior to beginning Work on construction site or of a particular area of the Work, and again within 10 days following date of Substantial Completion, videograph construction site and property adjacent to construction site.
- B. In the case of preconstruction recording, no Work shall begin prior to the ENGINEER's review and approval of content and quality of video for that area.
- C. Video recordings shall be made from both the ground level and from the balcony. ENGINEER shall have right to select subject matter and vantage point from which videos are to be taken.
- D. Video shall include the exterior of on-site structures and structures on adjacent property, interior of on-site structures, and top views of the tank. Particular emphasis shall be directed to physical condition of existing vegetation, structures, and pavements, and on CONTRACTOR storage and staging areas.
- E. Video taping shall be by a professional commercial videographer, experienced in shooting construction videos.
- F. Video Format and Quality:
1. Format: DVD format, with sound.
  2. Video: Produce bright, sharp, and clear images with accurate colors, free of distortion and other forms of picture imperfections.

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3. Date Stamp: Electronically, and accurately display the month, day and year of the recording.
  4. Audio: Audio documentation shall be done clearly, precisely, and at a moderate pace. Indicate date, Project name, and a brief description of the location of taping, including facility name and street names
- G. DVD Label: Shall indicate project name, date, time and event (e.g. "Preconstruction").

PART 2 -- PRODUCTS (Not used)

PART 3 – EXECUTION (Not used)

- END OF SECTION -

## PROJECT 11887

## SECTION 01070 - ABBREVIATIONS

PART 1 -- GENERAL

## 1.01 THE REQUIREMENT

- A. Wherever in these specifications references are made to the standards, specifications, or other published data of the various national, regional, or local organizations, such organizations may be referred to by their acronym or abbreviation only. As a guide to the user of these specifications, the following acronyms or abbreviations which may appear in these specifications shall have the meanings indicated herein.

## 1.02 ABBREVIATIONS AND ACRONYMS

AAMA	Architectural Aluminum Manufacturer's Association
AASHTO	American Association of the State Highway and Transportation Officials
ACI	American Concrete Institute
ACPA	American Concrete Pipe Association
AFBMA	Anti-Friction Bearing Manufacturer's Association, Inc.
AGMA	American Gear Manufacturer's Association
AHGDA	American Hot Dip Galvanizers Association
AI	The Asphalt Institute
AIA	American Institute of Architects
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
AITC	American Institute of Timber Construction
AMCA	Air Moving and Conditioning Association
ANSI	American National Standards Institute, Inc.
APA	American Plywood Association
API	American Petroleum Institute
APHA	American Public Health Association
APWA	American Public Works Association
ASA	Acoustical Society of America
ASAE	American Society of Agriculture Engineers
ASCE	American Society of Civil Engineers
ASHRAE	American Society of Heating, Refrigerating, and Air-Conditioning Engineers
ASLE	American Society of Lubricating Engineers
ASME	American Society of Mechanical Engineers
ASMM	Architectural Sheet Metal Manual
ASSE	American Society of Sanitary Engineers
ASTM	American Society for Testing and Materials
AWPA	American Wood Preservers Association
AWPI	American Wood Preservers Institute
AWS	American Welding Society
AWWA	American Water Works Association
BHMA	Builders Hardware Manufacturer's Association
CMA	Concrete Masonry Association
CRSI	Concrete Reinforcing Steel Institute
DIPRA	Ductile Iron Pipe Research Association
EIA	Electronic Industries Association

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ETL	Electrical Test Laboratories
FDEP	Florida Department of Environmental Protection
FDOT	Florida Department of Transportation
FS	Federal Specifications
IEEE	Institute of Electrical and Electronics Engineers
IES	Illuminating Engineering Society
IPCEA	Insulated Power Cable Engineers Association
ISA	Instrument Society of America
ISO	International Organization for Standardization
MBMA	Metal Building Manufacturer's Association
MTI	Marine Testing Institute
NAAM	National Association of Architectural Metal Manufacturer's
NACE	National Association of Corrosion Engineers
NBS	National Bureau of Standards
NEC	National Electrical Code
NEMA	National Electrical Manufacturer's Association
NFPA	National Fire Protection Association
NRCA	National Roofing Contractors Association
OSHA	Occupational Safety and Health Administration
PCA	Portland Cement Association
SBC	Standard Building Code
SMACCNA	Sheet Metal and Air Conditioning Contractors National Association
SSPC	Society For Protective Coatings
SSPWC	Standard Specifications for Public Works Construction
SFWMD	South Florida Water Management District
UL	Underwriters Laboratories, Inc.

PART 2 -- PRODUCTS (Not Used)

PART 3 -- EXECUTION (Not Used)

- END OF SECTION -

## PROJECT 11887

## SECTION 01090 - REFERENCE STANDARDS

PART 1 -- GENERAL

## 1.01 THE REQUIREMENT

- A. Titles of Sections and Paragraphs: Captions accompanying specification sections and paragraphs are for convenience of reference only, and do not form a part of the Specifications.
- B. Applicable Publications: Whenever in these Specifications references are made to published specifications, codes, standards, or other requirements, it shall be understood that wherever no date is specified, only the latest specifications, standards, or requirements of the respective issuing agencies which have been published as of the date of the opening of bids, shall apply; except to the extent that said standards or requirements may be in conflict with applicable laws, ordinances, or governing codes.
- C. No requirements set forth herein or shown on the Drawings shall be waived because of any provision of, or omission from, said standards or requirements.
- D. Specialists, Assignments: In certain instances, Specification text requires (or implies) that specific work is to be assigned to specialists or expert entities, who must be engaged for the performance of that work. Such assignments shall be recognized as special requirements over which the Contractor has no choice or option. These requirements shall not be interpreted so as to conflict with the enforcement of building codes and similar regulations governing the Work; also they are not intended to interfere with local union jurisdiction settlements and similar conventions. Such assignments are intended to establish which party or entity involved in a specific unit of work is recognized as "expert" for the indicated construction processes or operations. Nevertheless, the final responsibility for fulfillment of the entire set of contract requirements remains with the Contractor.

## 1.02 REFERENCE SPECIFICATIONS, CODES, AND STANDARDS

- A. Without limiting the generality of other requirements of the specifications, all work specified herein shall conform to or exceed the requirements of all applicable codes.
- B. References herein to "Building Code" shall mean the Florida Building Code. The latest edition of the code as approved and used by the local agency as of the date of the Notice to Proceed, as adopted by the agency having jurisdiction, shall apply to the Work herein, including all addenda, modifications, amendments, or other lawful changes thereto.
- C. In case of conflict between codes, reference standards, Drawings and the other Contract Documents, the most stringent requirements shall govern. All conflicts shall be brought to the attention of the CITY for clarification and directions prior to ordering or providing any materials or labor. The Contractor shall follow the most stringent requirements.
- D. The Contractor shall construct the Work specified herein in accordance with the requirements of the Contract Documents and the referenced portions of those referenced codes, standards, and Specifications listed herein.

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- E. References herein to "OSHA Regulations for Construction" shall mean Title 29, Part 1926, Construction Safety and Health Regulations, Code of Federal Regulations (OSHA), including all changes and amendments thereto.
- F. References herein to "OSHA Standards" shall mean Title 29, Part 1910, Occupational Safety and Health Standards, Code of Federal Regulations (OSHA), including all changes and amendments thereto.

PART 2 -- PRODUCTS (Not Used)

PART 3 -- EXECUTION (Not used)

- END OF SECTION -

## PROJECT 11887

## SECTION 01200 - PROJECT MEETINGS

PART 1 -- GENERAL

## 1.01 PRECONSTRUCTION MEETING

- A. General: A preconstruction meeting will be held after Award of Contract, but prior to starting work at the site. The CITY will schedule the meeting at a mutually agreed time, prepare and distribute the agenda and prepare and distribute the meeting minutes.
- B. Attendance:
1. CITY
  2. Engineer
  3. CONTRACTOR
  4. Major subcontractors
  5. Safety representative
  6. Representatives of governmental or other regulatory agencies.
- C. Minimum Agenda: The purpose of the meeting is to designate responsible personnel and establish a working relationship. The agenda will include the following:
1. Tentative construction schedule
  2. Critical work sequencing
  3. Designation of responsible personnel
  4. Processing of Field Decisions and Change Orders
  5. Adequacy of distribution of Contract Documents
  6. Submittal of Shop Drawings and samples
  7. Procedures for maintaining record documents
  8. Use of site and CITY's requirements
  9. Major equipment deliveries and priorities
  10. Safety and first aid procedures
  11. Security procedures
  12. Housekeeping procedures
  13. Processing of Partial Payment Requests
  14. General regard for community relations

## 1.02 PROGRESS MEETINGS

- A. General: Progress meetings will be held during the performance of the work of this Contract. The CITY will schedule the meeting at a mutually agreed time. The CONTRACTOR shall

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prepare and distribute the agenda and prepare and distribute the meeting minutes. The CONTRACTOR shall distribute meeting minutes within two working days after the meeting.

- B. Frequency: Progress meetings will be held biweekly during the performance of the work of this Contract. Additional meetings may be called as progress of work dictates. Meetings may be held less frequently at the discretion of the CITY.
- C. Attendance:
1. CITY
  2. ENGINEER
  3. CONTRACTOR
  4. Subcontractors active on-site
  5. The CONTRACTOR may at its discretion request attendance of its suppliers and manufacturers.
- D. Minimum Agenda: The purpose of the meetings will be to review progress of the work and maintain coordination efforts. The agenda will include the following:
1. Review and approve minutes of previous meetings.
  2. Review progress of Work since last meeting.
  3. Review proposed 30-60 day construction schedule.
  4. Note and identify problems which impede planned progress.
  5. Develop corrective measures and procedures to regain planned schedule.
  6. Revise construction schedule as indicated and plan progress during next work period.
  7. Maintaining of quality and work standards.
  8. Complete other current business.
  9. Schedule next progress meeting.

PART 2 -- PRODUCTS (Not used)

PART 3 – EXECUTION (Not used)

- END OF SECTION -

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## SECTION 01300 - SUBMITTALS

PART 1 -- GENERAL

## 1.01 DEFINITIONS

- A. Action Submittal: Written and graphic information submitted by CONTRACTOR, that requires ENGINEER's approval.
- B. Informational Submittal: Information submitted by CONTRACTOR, that does not require ENGINEER's approval. Submittals not meeting conditions of the Contract will be returned.

## 1.02 PROCEDURES

- A. Direct submittals the CITY at the following address, unless directed otherwise.

City of Fort Lauderdale  
100 N Andrews Avenue  
4<sup>th</sup> Floor – Engineering  
Fort Lauderdale, FL 33301  
Attention: Steve Hillberg, P.E.

- C. Transmittal of Submittal:

- 1. CONTRACTOR shall:
  - a. Review each submittal and check for compliance with Contract Documents.
  - b. Stamp each submittal with uniform approval stamp before submitting to CITY.
    - 1) Stamp to include the City's Project name and project number, submittal number, Specification number, CONTRACTOR's reviewer name, date of CONTRACTOR's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with Contract Documents.
    - 2) ENGINEER will not review submittals that do not bear CONTRACTOR's approval stamp and will return them without action
- 2. Complete, sign, and transmit with each submittal package, one Transmittal of CONTRACTOR's Submittal form attached at end of this section.
- 3. Identify each submittal with the following:
  - a. Numbering and Tracking System:
    - 1) Sequentially number each submittal.

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- 2) Resubmission of submittal shall have original number with sequential alphabetic suffix.
    - b. Specification section and paragraph to which submittal applies.
    - c. Project title and CITY's project number.
    - d. Date of transmittal.
    - e. Names of CONTRACTOR, Subcontractor or Supplier, and manufacturer as appropriate.
  4. Identify and describe each deviation or variation from Contract Documents.
- D. Format:
1. Do not base Shop Drawings on reproductions of Contract Documents.
  2. Package submittal information by individual specification section. Do not combine different specification sections together in submittal package, unless otherwise directed in Specification.
  3. Present in a clear and thorough manner and in sufficient detail to show kind, size, arrangement, and function of components, materials, and devices, and compliance with Contract Documents
  4. Index with labeled tab dividers in orderly manner.
- E. Timeliness: Schedule and submit in accordance with schedule of Shop Drawing and Sample submittals, and requirements of individual Specification sections.
- F. Processing Time:
1. Time for review shall commence on CITY's receipt of submittal.
  2. CITY will act upon CONTRACTOR's submittal and transmit response to CONTRACTOR not later than 14 days after receipt, unless otherwise specified.
  3. Resubmittals will be subject to same review time.
  4. No adjustment of Contract Times or Price will be allowed due to delays in progress of Work caused by rejection and subsequent resubmittals.
- G. Resubmittals: Clearly identify each correction or change made.
- H. Incomplete Submittals:
1. CITY will return entire submittal for CONTRACTOR's revision if preliminary review deems it incomplete.
  2. When any of the following are missing, the submittal will be deemed incomplete:
    - a. CONTRACTOR's review stamp, completed and signed.
    - b. Transmittal of CONTRACTOR's Submittal, completed and signed.

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- c. Insufficient number of copies.
  - I. Submittals not required by Contract Documents:
    - 1. Will not be reviewed and will be returned stamped "Not Subject to Review".
    - 2. CITY will keep one copy and return all remaining copies to CONTRACTOR.
- 1.04 ACTION SUBMITTALS
- A. Prepare and submit Action Submittals required by individual Specification sections.
  - B. Shop Drawings:
    - 1. Copies: 12
    - 2. Identify and Indicate:
      - a. Applicable Contract Drawing and Detail number, products, units and assemblies, and system or equipment identification or tag numbers
      - b. Equipment and Component Title: Identical to title shown on Drawings.
      - c. Critical field dimensions and relationships to other critical features of Work. Note dimensions established by field measurement.
      - d. Project-specific information drawn accurately to scale.
    - 3. Manufacturer's standard schematic drawings and diagrams as follows:
      - a. Modify to delete information that is not applicable to the Work.
      - b. Supplement standard information to provide information specifically applicable to the Work.
    - 4. Product Data: Provide as specified in individual Specification sections.
    - 5. Foreign Manufacturers: When proposed, include following additional information:
      - a. Names and addresses of at least 2 companies that maintain technical service representatives close to Project.
      - b. Complete list of spare parts and accessories for each piece of equipment.
  - B. Samples:
    - 1. Copies: 3, unless otherwise specified in individual Specification sections.
    - 2. Preparation: Mount, display, or package Samples in manner specified to facilitate review of quality. Attach label on unexposed side that includes the following:
      - a. Manufacturer name.
      - b. Model Number.

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- c. Material.
    - d. Sample source.
  3. Manufacturer's Color Chart: Units or sections of units showing full range of colors, textures, and patterns available.
  4. Full-size Samples:
    - a. Size as indicated in individual Specification section.
    - b. Prepared from same materials to be used for the Work.
    - c. Cured and finished in manner specified.
    - d. Physically identical with product proposed for use.
- D. Action Submittal Dispositions: CITY will review, mark, and stamp as appropriate, and CITY will distribute marked-up copies as noted:
  1. Approved:
    - a. CONTRACTOR may incorporate product(s) or implement Work covered by submittal.
    - b. Distribution:
      - 1) One copy furnished Resident Project Representative.
      - 2) One copy furnished CITY.
      - 3) Three copies retained in CITY's file.
      - 4) Remaining copies returned to CONTRACTOR appropriately annotated.
  2. Approved as Noted:
    - a. CONTRACTOR may incorporate product(s) or implement Work covered by submittal, in accordance with CITY's or ENGINEER's notations.
    - b. Distribution:
      - 1) One copy furnished Resident Project Representative.
      - 2) One copy furnished CITY.
      - 3) Three copies retained in CITY's file.
      - 4) Remaining copies returned to CONTRACTOR appropriately annotated.
  3. Partial Approval, Resubmit as Noted:
    - a. Make corrections or obtain missing portions, and resubmit.

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- b. Except for portions indicated, CONTRACTOR may begin to incorporate product(s) or implement Work covered by submittal, in accordance with CITY'S or ENGINEER's notations.
  - c. Distribution:
    - 1) One copy furnished Resident Project Representative.
    - 2) Three copies retained in CITY's file.
    - 3) One copy furnished ENGINEER.
    - 4) Remaining copies returned to CONTRACTOR appropriately annotated.
4. Revise and Resubmit:
- a. CONTRACTOR may not incorporate product(s) or implement Work covered by submittal.
  - b. Distribution:
    - 1) One copy furnished Resident Project Representative.
    - 2) Three copies retained in CITY's file.
    - 3) One copy furnished ENGINEER..
    - 4) Remaining copies returned to CONTRACTOR appropriately annotated.

## 1.05 INFORMATIONAL SUBMITTALS

A. General:

- 1. Copies: Submit 4 copies, unless otherwise indicated in individual Specification section.
- 2. Refer to individual Specification sections for specific submittal requirements.
- 3. CITY will review each submittal. If submittal meets conditions of the Contract, CITY will forward copies to appropriate parties. If CITY determines submittal does not meet conditions of the Contract and is therefore considered unacceptable, CITY will retain one copy and return remaining copies with review comments to CONTRACTOR, and require that submittal be corrected and resubmitted.

B. Application for Payment: In accordance with Section 01025, MEASUREMENT AND PAYMENT.C. Certificates:

- 1. General:
  - a. Provide notarized statement that includes signature of entity responsible for preparing certification.

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- b. Signed by officer or other individual authorized to sign documents on behalf of that entity.
  2. Welding: In accordance with individual Specification sections.
  3. Installer: Prepare written statements on manufacturer's letterhead certifying that installer complies with requirements as specified in individual Specification sections.
  4. Material Test: Prepared by qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements.
  5. Certificates of Successful Testing or Inspection: Submit when testing or inspection is required by Laws and Regulations or governing agency or specified in individual Specification sections.
  6. Manufacturer's Certificate of Compliance: Submit in accordance with Section 01660.
- D. Construction Photographs and Video: In accordance with Section 01040, COORDINATION, and as may otherwise be required in Contract Documents.
- E. Contract Closeout Submittals: In accordance with the Section entitled "Project Closeout".
- F. CONTRACTOR-Design Data:
1. Written and graphic information.
  2. List of assumptions.
  3. List of performance and design criteria.
  4. Summary of loads or load diagram, if applicable.
  5. Calculations.
  6. List of applicable codes and regulations.
  7. Name and version of software.
  8. Information requested in individual Specification section.
- G. Manufacturer's Instructions: Written or published information that documents manufacturer's recommendations, guidelines, and procedures in accordance with individual Specification sections.
- H. Schedules:
1. Schedule of Shop Drawing and Sample Submittals: Prepare separately or in combination with Progress Schedule as specified in Section 01310, CONSTRUCTION PROGRESS SCHEDULES.

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- a) Show for each, at a minimum, the following:
    - 1) Specification section number.
    - 2) Identification by numbering and tracking system as specified under Paragraph Transmittal of Submittal.
    - 3) Estimated date of submission to CITY, including reviewing and processing time.
  - b) On a monthly basis, submit updated schedule to CITY if changes have occurred or resubmittals are required.
2. Progress Schedules: In accordance with Section 01310, CONSTRUCTION PROGRESS SCHEDULES.
- I. Special Guarantee: Supplier's written guarantee as required in individual Specification sections.
  - J. Statement of Qualification: Evidence of qualification, certification, or registration as required in Contract Documents to verify qualifications of professional land surveyor, engineer, materials testing laboratory, specialty Subcontractor, trade, Specialist, consultant, installer, and other professionals.
  - K. Submittals Required by Laws, Regulations, and Governing Agencies:
    1. Submit promptly notifications, reports, certifications, payrolls, and otherwise as may be required, directly to the applicable federal, state, or local governing agency or their representative.
    2. Transmit to CITY one copy of correspondence and transmittals (to include enclosures and attachments) between CONTRACTOR and governing agency.
  - L. Test and Inspection Reports:
    1. General: Shall contain signature of person responsible for test or report.
    2. Factory:
      - a. Identification of product and Specification section, type of inspection or test with referenced standard or code.
      - b. Date of test, Project title and number, and name and signature of authorized person.
      - c. Test results.
      - d. If test or inspection deems material or equipment not in compliance with Contract Documents, identify corrective action necessary to bring into compliance.
      - e. Provide interpretation of test results, when requested by CITY.
      - f. Other items as identified in individual Specification sections.

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3. Field: As a minimum, include the following:
  - a. Project title and number.
  - b. Date and time.
  - c. Record of temperature and weather conditions.
  - d. Identification of product and Specification section.
  - e. Type and location of test, sample, or inspection, including referenced standard or code.
  - f. Date issued, testing laboratory name, address, and telephone number, and name and signature of laboratory inspector.
  - g. If test or inspection deems material or equipment not in compliance with Contract Documents, identify corrective action necessary to bring into compliance.
  - h. Provide interpretation of test results, when requested by CITY.
  - i. Other items as identified in individual Specification sections.
- M. The supplements listed below, following "END OF SECTION", are part of this Specification.
  1. Forms: Transmittal of CONTRACTOR's Submittal

PART 2 – PRODUCTS (Not Used)

PART 3 – EXECUTION (Not Used)

- END OF SECTION –

TRANSMITTAL OF CONTRACTOR'S SUBMITTAL

TO: City of Fort Lauderdale.  
100 N Andrews Ave, 4<sup>th</sup> Floor - Engineering  
Fort Lauderdale, FL 33301  
Attn: Steve Hillberg, P.E.

Submittal No.: \_\_\_\_\_

New Submittal     Resubmittal

Project: \_\_\_\_\_

Project No.: \_\_\_\_\_

Specification Section No.: \_\_\_\_\_

FROM: \_\_\_\_\_

**(Cover only one section with each transmittal)**

Schedule Date of Submittal: \_\_\_\_\_

SUBMITTAL TYPE:     Shop Drawing                       Sample                       Informational

The following items are hereby submitted:

Number of Copies	Description of Item Submitted (Type, Size, Model Number, Etc.)	Spec. and Para. No.	Drawing or Brochure Number	Contains Variation to Contract	
				No	Yes

CONTRACTOR hereby certifies that (i) CONTRACTOR has complied with the requirements of Contract Documents in preparation, review, and submission of designated Submittal and (ii) the Submittal is complete and in accordance with the Contract Documents and requirements of laws and regulations and governing agencies.

By: \_\_\_\_\_

CONTRACTOR (Authorized Signature)

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## SECTION 01310 - CONSTRUCTION PROGRESS SCHEDULES

PART 1 - GENERAL

## 1.01- THE REQUIREMENT

## A. Scope of Work:

1. Promptly after award of the Contract, 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 principles and definition of CPM terms used herein shall be as set forth in the Associated General Contractors of America (AGC) publication, Construction Planning & Scheduling Manual, Copyright 1984, but the provisions of this Specification shall govern the planning, coordinating, and performance of the Work.
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. Summary of Project: Section 01010.
2. Project Meetings: Section 01200.
3. Shop Drawings, Working Drawings, and Samples: Section 01340.
4. Schedule of Values: Section 01370.

## 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 and shall include at least two (2) projects valued at least half the expected value of this project.

## 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.

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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 Primavera Project Planner for Windows by Primavera Systems, Inc., Microsoft Project, 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. Foundation work.
    - f. Structural framing.
    - g. Subcontractor work.
    - h. Equipment installations.
    - i. Finishings.
    - j. Instrumentation.
    - k. Electrical.
    - l. Painting.
    - m. Operator training and receipt of operation and maintenance manuals.
    - n. Equipment Testing.
    - o. Equipment and process start-up.
    - p. Receipt of spare parts.
    - q. Project closeout.
  3. Show projected percentage of completion for each item, as of the first day of each month.

## PROJECT 11887

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: Shop Drawings, Work Drawings, and Samples. 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:

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- 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.

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 Section 00500: Agreement. 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.

- C. 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 therefrom. 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.
- D. Acceptance. 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 six (6) copies of the time-scaled network diagram, six (6) copies of a computerized tabulated schedule in which the activities have been sequenced by numbers, six (6) copies of a computerized tabulated schedule in which the activities have been sequenced by early starting date, and six (6) copies of a computerized, tabulated schedule in which activities have been sequenced by total float, and six (6) copies sorted by predecessor/successor.
- E. Revised Work Schedules. 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

## PROJECT 11887

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.

- F. Schedule Revisions. 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.
2. Jobsite file.
3. Subcontractors.
4. Other concerned parties.
5. Owner (two copies).

- 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 and according to the City's Contract, the approved changes shall be reflected in the next scheduled revision or update submittal of the construction progress schedule by the Contractor.

## 1.09 CPM STANDARDS

- A. CPM, as required by this Section, shall be interpreted to be generally as outlined in the Associated General Contractor's (AGC) publication, Construction Planning & Scheduling Manual, Copyright 1984.

- B. Work schedules shall include a graphic network and computerized, tabulated schedules as described below. To be acceptable the schedule must demonstrate the following:

1. A logical succession of work from start to finish.
2. Definition of each activity. Activities shall be identified by major specification section numbers, as applicable, and by major structure.
3. A logical flow of work crews/equipment (crews are to be defined by manpower category and man-hours; equipment by type and hours).
4. Show all work activities and interfaces including submittals as well as major material and equipment deliveries.

- C. Networks.

1. The CPM network, or diagram, shall be in the form of a time-scaled diagram of the customary activity-on-type and may be divided into a number of

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- separate pages with suitable notation relating the interface points among the pages. Notation on each activity line shall include a brief work description and a duration, as described in Paragraph 1.09, D. herein.
2. All construction activities and procurement shall be indicated in a time-scaled format, and a calendar shall be shown on all sheets along the entire sheet length. Each activity arrow shall be plotted so the beginning and completion dates of said activity can be determined graphically by comparison with the calendar scale. All activities shall be shown using the symbols that clearly distinguish between critical path activities, non-critical path activities, and float for each non-critical activity. All non-critical path activities shall show estimated performance time and float time in scaled form.
- D. The duration indicated for each activity shall be in calendar days and shall represent the single best time considering the scope of the work and resources planned for the activity including time for inclement weather. Except for certain non-labor activities, such as curing concrete or delivering materials, activity durations shall not exceed fourteen (14) days nor be less than one (1) day unless otherwise accepted by the Engineer.
- E. Tabulated Schedules. The initial schedule shall include the following minimum data for each activity.
1. Activity Beginning and Ending Numbers (i-j numbers) (single activity numbers may be used).
  2. Duration.
  3. Activity Description.
  4. Early Start Date (Calendar Dated).
  5. Late Start Date (Calendar Dated).
  6. Early Finish Date (Calendar Dated).
  7. Late Finish Date (Calendar Dated).
  8. Identified Critical Path.
  9. Total Float (Note: No activity may show more than 20 days float).
  10. Cost of Activity.
  11. Equipment Hours, by type; Man-Power Hours, by crew or trade.
- F. Project Information. Each tabulation shall be prefaced with the following summary data.
1. Project Name.
  2. Contractor.
  3. Type of Tabulation (Initial or Updated).
  4. Project Duration.
  5. Project Scheduled Completion Date.
  6. Effective or Starting Date of the Schedule.

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7. New Project Completion Date and Project Status (if an updated or revised schedule).
8. Actual Start Date and Actual Finish Date (for all updated schedules.)

## 1.10 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.

## 1.11 PROGRESS MEETINGS

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 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 -

## PROJECT 11887

## SECTION 01400 - QUALITY CONTROL

PART 1 -- GENERAL

## 1.01 THE REQUIREMENT

## A. Testing Laboratory Services

1. Laboratory testing and checking required by the Specifications, including the cost of transporting all samples and test specimens, shall be provided and paid for by the CONTRACTOR unless otherwise indicated in the Specifications. The cost of monitoring and testing associated with paint removal, including worker protection and protection of the environment is to be paid for by the CONTRACTOR, see Section 09805.
2. Materials to be tested include, but are not necessarily limited to the following: cement, concrete aggregate, concrete, bituminous paving materials, structural and reinforcing steel, waterproofing, select backfill, crushed stone or gravel and sand.
3. Tests required by the CITY shall not relieve the CONTRACTOR from the responsibility of supplying test results and certificates from manufacturers or suppliers to demonstrate conformance with the Specifications.
4. Procedure
  - a. The CONTRACTOR shall schedule, plan and conduct his operations to permit taking of field samples and test specimens, as required, and to allow adequate time for laboratory tests.
  - b. The collection, field preparation and storage of field samples and test specimens shall be as directed by the CITY with the cooperation of the CONTRACTOR.
5. Significance of Tests
  - a. Test results shall be binding on both the CONTRACTOR and the CITY, and shall be considered irrefutable evidence of compliance or noncompliance with the Specification requirements, unless supplementary testing shall prove, to the satisfaction of the CITY, that the initial samples were not representative of actual conditions.
6. Supplementary and Other Testing
  - a. Nothing shall restrict the CONTRACTOR from conducting tests he may require. Should the CONTRACTOR at any time request the CITY to consider such test results, the test reports shall be certified by an independent testing laboratory acceptable to the CITY. Testing of this nature shall be conducted at the CONTRACTOR's expense.

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## 1.02 FIELD TESTING OF EQUIPMENT

- A. All equipment shall be set, aligned and assembled in conformance with the manufacturer's drawings and instructions.

## 1.03 IMPERFECT WORK, EQUIPMENT, OR MATERIALS

- A. Any defective or imperfect work, equipment, or materials furnished by the CONTRACTOR which is discovered before the final acceptance of the work, as established by the Certificate of Substantial Completion, or during the subsequent guarantee period, shall be removed immediately even though it may have been overlooked by the ENGINEER and estimated for payment. Any equipment or materials condemned or rejected by the ENGINEER shall be tagged as such and shall be immediately removed from the site. Satisfactory work or materials shall be substituted for that rejected.
- B. The CITY may order tests of imperfect or damaged work, equipment, or materials to determine the required functional capability for possible acceptance, if there is no other reason for rejection. The cost of such tests shall be borne by the CONTRACTOR; and the nature, tester, extent and supervision of the tests will be as determined by the ENGINEER. If the results of the tests indicate that the required functional capability of the work, equipment, or material was not impaired, consistent with the final general appearance of same, the work, equipment, or materials may be deemed acceptable. If the results of such tests reveal that the required functional capability of the questionable work, equipment, or materials has been impaired, then such work, equipment, or materials shall be deemed imperfect and shall be replaced. The CONTRACTOR may elect to replace the imperfect work, equipment, or material in lieu of performing the tests.

## 1.04 INSPECTION AND TESTS

- A. The CONTRACTOR shall allow ample time and opportunity for testing materials and equipment to be used in the work. He shall advise the CITY promptly upon placing orders for material and equipment so that arrangements may be made, if desired, for inspection before shipment from the place of manufacture. The CONTRACTOR shall at all times furnish the ENGINEER and his representatives, facilities including labor, and allow proper time for inspecting and testing materials, equipment, and workmanship. The CONTRACTOR must anticipate possible delays that may be caused in the execution of his work due to the necessity of materials and equipment being inspected and accepted for use. The CONTRACTOR shall furnish, at his own expense, all samples of materials required by the CITY for testing, and shall make his own arrangements for providing water, electric power, or fuel for the various inspections and tests of structures and equipment.
- B. The CONTRACTOR shall furnish the services of representatives of the manufacturers of certain equipment, as prescribed in other Sections of the Specifications. The CONTRACTOR shall also place his orders for such equipment on the basis that, after the equipment has been tested prior to final acceptance of the work, the manufacturer will furnish the CITY with certified statements that the equipment has been installed properly and is ready to be placed in functional operation. Tests and analyses required of equipment shall be paid for by the CONTRACTOR, unless specified otherwise in the Section which covers a particular piece of equipment.

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- C. Where other tests or analyses are specifically required in other Sections of these Specifications, the cost thereof shall be borne by the CONTRACTOR. The CONTRACTOR will bear the cost of all tests, inspections, or investigations undertaken by the order of the CITY for the purpose of determining conformance with the Contract Documents if such tests, inspection, or investigations are not specifically required by the Contract Documents, and if conformance is ascertained thereby. Whenever nonconformance is determined by the CITY as a result of such tests, inspections, or investigations, the CONTRACTOR shall bear the full cost thereof or shall reimburse the CITY for said cost. In this connection, the cost of any additional tests and investigations, which are ordered by the CITY to ascertain subsequent conformance with the Contract Documents, shall be borne by the CONTRACTOR.

PART 2 – PRODUCTS (Not Used)

PART 3 – EXECUTION (Not Used)

- END OF SECTION -

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## SECTION 01500 - CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

PART 1 -- GENERAL

## 1.01 REFERENCES

A. The following is a list of standards which may be referenced in this Section:

1. U.S. Weather Bureau, "Rainfall-Frequency Atlas of the U.S. for Durations From 30 Minutes to 24 Hours and Return Periods From 1 to 100 Years."
2. Federal Emergency Management Agency.
3. NFPA, National Fire Prevention Standard for Safeguarding Building Construction Operations.
4. Florida Department of Law Enforcement – Domestic Terrorism Task Force for Code Orange Conditions.

## 1.02 SUBMITTALS

A. Informational Submittals:

1. Copies of permits and approvals for construction as required by laws and regulations and governing agencies.
2. Temporary Utility Submittals: Dewatering well locations
3. Temporary Construction Submittals:
  - a. CONTRACTOR's field office, storage yard, and storage building plans, including gravel surfaced area.
  - b. Fencing and protective barrier locations and details.

## 1.03 MOBILIZATION

A. Mobilization shall include, but not be limited to, these principal items:

1. Obtaining required permits.
2. Moving CONTRACTOR's field office and equipment required for first month operations onto site.
3. Installing temporary construction power, wiring, and lighting facilities.
4. Providing onsite communication facilities, including telephones.
5. Providing onsite sanitary facilities and potable water facilities as specified and as required by Laws and Regulations, and governing agencies.

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6. Arranging for and erection of CONTRACTOR's work and storage yard.
  7. Posting OSHA required notices and establishing safety programs and procedures.
  8. Having CONTRACTOR's superintendent at site full time.
- B. CONTRACTOR is responsible for finding a suitable location for a project staging and material storage area, as required
- 1.04 PERMITS
- A. Permits, Licenses, or Approvals: Obtain in accordance with the CITY's construction standards and Specifications and as otherwise required for completion of the Work.
- 1.05 PROTECTION OF WORK AND PROPERTY
- A. Comply with CITY's safety rules while on CITY's project.
- B. Keep CITY informed of serious onsite accidents and related claims

PART 2 -- PRODUCTS

## 2.01 MATERIALS

- B. No lead containing protective coating materials may be used on this project.

PART 3 -- EXECUTION

## 3.01 TEMPORARY UTILITIES

- A. Power:
1. Electric power is available at the site in the form of a currently unused power supply attached to the westernmost leg of the water tower and connected to overhead power lines on the west property line. The CONTRACTOR shall make arrangements with Florida Power and Light for activating the electric power service and metering equipment, setting up a new account in the CONTRACTOR's name, the electric power used during the contract period, and removing the power supply in its entirety from the site at the completion of the work.
  2. The CONTRACTOR shall be responsible for all costs associated with activating the power supply, using electric power and complete removal of the power supply and connection at the completion of the work.
- B. Lighting: Provide temporary lighting to meet all applicable safety requirements to allow erection, application, or installation of materials and equipment, and observation or inspection of the Work.

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C. Heating, Cooling, and Ventilating:

1. Provide as required to maintain adequate environmental conditions to facilitate progress of the Work, to meet specified minimum conditions for installation of materials, and to protect materials, equipment, and finishes from damage due to temperature or humidity.
2. Provide adequate forced air ventilation of enclosed areas to cure installed materials, to dispense humidity, and to prevent hazardous accumulations of dust, fumes, vapors, or gases.
3. Pay all costs of installation, maintenance, operation, removal, and fuel consumed.
4. Provide portable unit heaters, complete with controls, oil- or gas-fired, and suitably vented to outside as required for protection of health and property.
5. If permanent natural gas piping is used for temporary heating units, do not modify or reroute gas piping without approval of utility company. Provide separate gas metering as required by utility.

D. Water:

1. Hydrant Water.
  - a. Is available from nearby hydrants. Secure written permission for connection, meter installation, and use from water department and meet requirements for use. Notify fire department before obtaining water from fire hydrants.
  - b. Use only special hydrant-operating wrenches to open hydrants. Make certain that hydrant valve is open full, since cracking the valve causes damage to the hydrant. Repair damaged hydrants and notify appropriate agency as quickly as possible. Hydrants shall be completely accessible to fire department at all times.
  - c. Include costs to connect and transport water to construction areas in Contract Price
2. Potable Water – Dispenser Furnished: The CONTRACTOR shall furnish chilled bottled drinking water or water furnished in other suitable dispensers.

E. Sanitary and Personnel Facilities: Provide and maintain facilities for CONTRACTOR's employees, Subcontractors, and all other onsite employer's employees. Service, clean, and maintain facilities and enclosures.F. Fire Protection: Furnish and maintain on site adequate firefighting equipment capable of extinguishing incipient fires. Comply with applicable parts of National Fire Prevention Standard for Safeguarding Building Construction Operations (NFPA No. 241).

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## 3.02 PROTECTION OF WORK AND PROPERTY

A. General:

1. Perform Work within right-of-way and easements in a systematic manner that minimizes inconvenience to property owners and the public.
2. No residence or business shall be cut off from vehicular traffic for a period exceeding 2 hours, unless special arrangements have been made.
3. Maintain in continuous service all existing oil and gas pipelines, underground power, telephone or communication cable, water mains, irrigation lines, sewers, poles and overhead power, and all other utilities encountered along line of the Work, unless other arrangements satisfactory to owners of said utilities have been made.
4. Where completion of the Work requires temporary or permanent removal and/or relocation of existing utility, coordinate all activities with owner of said utility and perform all work to their satisfaction.
5. Protect, shore, brace, support, and maintain underground pipes, conduits, drains, and other underground utility construction uncovered or otherwise affected by construction operations.
6. Keep fire hydrants and water control valves free from obstruction and available for use at all times.
7. In areas where CONTRACTOR's operations are adjacent to or near a utility, such as gas, telephone, television, electric power, water, sewer, or irrigation system, and such operations may cause damage or inconvenience, suspend operations until arrangements necessary for protection have been made by CONTRACTOR.
8. Notify property owners and utility offices that may be affected by construction operation at least 2 working days in advance. Before exposing a utility, obtain utility owner's permission. Should service of utility be interrupted due to CONTRACTOR's operation, notify proper authority immediately. Cooperate with said authority in restoring service as promptly as possible and bear costs incurred.
9. Do not impair operation of existing utility systems. Prevent construction material, pavement, concrete, earth, volatile and corrosive wastes, and other debris from entering sewers, storm drains, pump stations, or other sewer structures.
10. Maintain original site drainage wherever possible.

- B. Existing Structures: Where CONTRACTOR contemplates removal of small structures such as mailboxes, signposts, and culverts that interfere with CONTRACTOR's operations, obtain approval of property owner and the CITY. Replace those removed in a condition equal to or better than original.

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- C. Finished Construction: Protect finished floors and concrete floors exposed as well as those covered with composition tile or other applied surfacing.
- D. Waterways: Keep ditches, culverts, and natural drainages continuously free of construction materials and debris.

## 3.03 TEMPORARY CONTROLS

A. Air Pollution Control:

1. Minimize air pollution from construction operations.
2. Burning of waste materials, rubbish, or other debris will not be permitted on or adjacent to site
3. Conduct operations of dumping rock and of carrying rock away in trucks to cause a minimum of dust. Give unpaved streets, roads, detours, or haul roads used in construction area a dust-preventive treatment or periodically water to prevent dust as needed up to daily, as directed by the CITY. Strictly adhere to applicable environmental regulations for dust prevention.

B. Noise Control:

1. Provide acoustical barriers so noise emanating from tools or equipment will not exceed legal noise levels.
2. Noise Control Plan: Propose plan to mitigate construction noise and to comply with noise control ordinances, including method of construction, equipment to be used, and acoustical treatments.

C. Water Pollution Control:

1. Divert sanitary sewage and nonstorm waste flow interfering with construction and requiring diversion to sanitary sewers. Do not cause or permit action to occur which would cause an overflow to existing waterway.
2. Prior to commencing excavation and construction, obtain CITY's agreement with detailed plans showing procedures intended to handle and dispose of sewage, groundwater, and stormwater flow, including dewatering pump discharges.
3. Comply with procedures outlined in U.S. Environmental Protection Agency manuals entitled, "Guidelines for Erosion and Sedimentation Control Planning," and "Implementation, Processes, Procedures, and Methods to Control Pollution Resulting from All Construction Activity," and "Erosion and Sediment Control-Surface Mining in Eastern United States."
4. Do not dispose of volatile wastes such as mineral spirits, oil, chemicals, or paint thinner in storm or sanitary drains. Disposal of wastes into streams or waterways is prohibited. Provide acceptable containers for collection and disposal of waste materials, debris, and rubbish.

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- D. Erosion, Sediment, and Flood Control: Provide, maintain, and operate temporary facilities to control erosion and sediment releases, and to protect the Work and existing facilities from flooding during construction period. Meet all local, state, and Federal requirements and obtain necessary permits and approvals as required. Discharges to storm drains, including discharge from dewatering systems, will not be permitted without the installation of a sediment removal system approved by the CITY.

## 3.04 STORAGE YARDS AND BUILDINGS

- A. Coordinate requirements with Section 01600, MATERIALS AND EQUIPMENT.
- B. Temporary Storage Yards: Construct temporary storage yards for storage of products that are not subject to damage by weather conditions.
- C. Temporary Storage Buildings:
1. Provide environmental control systems that meet recommendations of manufacturers of equipment and materials stored.
  2. Arrange or partition to provide security of contents and ready access for inspection and inventory.
  3. Store combustible materials (paints, solvents, fuels) in a well-ventilated and remote building meeting safety standards.
- D. Storage and staging facilities are permitted on private property subject to the review and approval of the Planning and Zoning Department and the issuance of a permit under the provisions of Section 47-19.2 of the Unified Land Development Regulations.

## 3.05 CLEANUP PROCEDURES FOR HURRICANE WARNINGS AND WATCHES

- A. In the event that the National Oceanographic and Atmospheric Administration (NOAA) issues a hurricane watch for the Fort Lauderdale area, the CITY will contact the CONTRACTOR informing him that the watch has been established. Once notified of a hurricane watch, the CONTRACTOR will remove all unnecessary items from the work area and tie down all remaining supplies, barricades, and movable (under 200 pounds) objects. The CITY will determine "necessary" items. If a warning is issued, the CONTRACTOR shall complete the clean-up and evacuate the area the same day. The CITY shall not be liable for any costs or delays caused as a result of demobilization or remobilization due to the above..

## 3.06 CLEANING DURING CONSTRUCTION

- A. In accordance with General Conditions, as may be specified in Specification sections, and as required herein.
- B. Wet down exterior surfaces prior to sweeping to prevent blowing of dust and debris. At least weekly, sweep all floors (basins, tunnels, platforms, walkways, roof surfaces), and pick up all debris and dispose.

## PROJECT 11887

- C. Provide approved containers for collection and disposal of waste materials, debris, and rubbish. At least at weekly intervals, dispose of such waste materials, debris, and rubbish offsite.
- D. Thoroughly clean all spilled dirt, gravel, or other foreign material caused by the construction operations from all streets and roads at the conclusion of each day's operation. Sidewalks, unless under construction, shall be kept clear of material, and available for pedestrian use at all times.

## 3.07 PROJECT SIGNS

- A. Provide one project sign, as shown in the Section 01590, at the location on site to be determined by the CITY.

## 3.08 SUPPLEMENTS

- A. The supplements listed below, following "END OF SECTION," are part of this Specification.
  - 1. Supplement 1, Sample Door Hanger.
  - 2. Supplement 2, Staging Area Ordinance.

- END OF SECTION -

[CONTRACTOR'S NAME]

[CONTRACTOR'S STREET ADDRESS]

[CONTRACTOR'S CITY, STATE AND ZIP]

[CONTRACTOR'S TELEPHONE NUMBER]

[CONTRACTOR'S FAX NUMBER]

**MEMORANDUM**

**TO: RESIDENTS OF [LOCATION OF CONSTRUCTION]**

**DATE: [CURRENT DATE]**

**RE: CONSTRUCTION IN YOUR AREA**

**FROM: [CONTRACTOR'S NAME}**

**Construction in your area will commence on [date of construction commencement].**

**The construction area is from [boundary #1] to [boundary #2].**

**Access to the area will be limited at certain times due to the construction activities. We apologize for any inconvenience and we will do our best to accommodate access to residents.**

**Thank you,**

**[Contractor Name]**



## ORDINANCE NO. C-02-

AN ORDINANCE AMENDING THE UNIFIED LAND DEVELOPMENT REGULATIONS OF THE CITY OF FORT LAUDERDALE, FLORIDA, AMENDING SECTION 47-19.2, ACCESSORY BUILDINGS AND STRUCTURES, GENERAL, TO ADD A NEW SUBSECTION ENTITLED "CONSTRUCTION STAGING AREAS" TO PERMIT PROPERTY TO BE USED AS A STAGING AREA IN CONNECTION WITH PUBLIC CONSTRUCTION PROJECTS AS A TEMPORARY USE IN ANY ZONING DISTRICT AND PROVIDING REQUIREMENTS AND A PROCESS FOR REVIEW, APPROVAL AND TERMINATION OF APPROVAL.

BE IT ORDAINED BY THE CITY COMMISSION OF THE CITY OF FORT LAUDERDALE, FLORIDA:

SECTION 1. That Section 47-19.2, Accessory buildings and structures, general, of the Unified Land Development Regulations (hereinafter referred to as "ULDR") of the City of Fort Lauderdale, Florida, is hereby amended to add a new subsection FF as follows:

Sec. 47-19.2. Accessory buildings and structures, general

FF. Construction staging areas. The staging of public purpose construction projects including but not limited to the construction of public rights-of-way, utilities and facilities, may be permitted in all zoning districts as a temporary use, in order to allow for the safe, efficient completion of the project with minimal disruption to existing residents, businesses, and traffic, and to ensure that public services and facilities are available. Construction staging materials shall include the parking and placing and storing of construction materials, vehicles, equipment and support facilities required for the construction of a public project. Construction staging areas shall be permitted subject to the following review processes and conditions:

1. Application. An application shall, in addition to the requirements provided in Section 47-24,

ORDINANCE NO. C-02-

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Development Permits and Procedures, include the following:

- a. A description and sketch dimensioned to scale of the proposed use of the subject property as a construction staging area, including such information as the location and type of construction materials, equipment, support facilities, vehicles, trailers or other construction equipment, storage areas for materials, traffic circulation plan to and from the site, access to the site, location, type of materials and details of any required sign and fencing.
- b. A sketch of the proposed site signage, including all contact information; and the proposed location of the sign.
- c. The time required to complete the public construction project.
- d. A statement signed by the property owner stating that the property owner shall consent to the temporary use of the property for construction staging as provided in the temporary construction permit application and acknowledging that the property owner shall be held responsible for the removal of construction staging materials and debris if the applicant fails to do so upon termination of the temporary public purpose construction staging permit.

2. Standards.

- a. A fence of a material, design, and construction that meets Building Code requirements and precludes visibility through the fence, shall be erected around the

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- perimeter of the site. The fence shall have a minimum height of 6.5 feet and a maximum height of 10 feet; such height to be determined as part of the Site Plan Level I permit based on what height is necessary to protect adjacent properties.
- b. The site shall be posted with a sign 16 square feet in size adjacent to the street, clearly visible from the right-of-way identifying the project by name, the name of the contractor, and the engineer responsible for construction management, and shall provide 24-hour phone contact information.
- c. Movement of vehicles, storage materials or other activities at the site shall be limited to the hours of 7:30 A.M. to 5:30 P.M. Monday through Friday, unless otherwise specifically approved as provided in the Site Plan Level I permit.
- d. Construction staging areas at the site shall be limited to the activities approved as part of the Site Plan Level I permit and no other activities shall be permitted except as approved by amendment of the Site Plan Level I permit.
- e. Conditions of approval may be imposed if necessary to mitigate the impact on adjacent property such as temporary paving, landscaping, and watering, all in accordance with engineering standards.
- f. A termination date for the temporary construction permit shall be established by the department based on the information provided by the applicant, but an extension of such termination date may be granted if good

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cause is shown by filing an amendment to the Site Plan Level I permit.

3. Review process.

- a. Approval of a Site Plan Level I permit as described in Section 47-24.2.
- b. In addition to the review process applicable to a Site Plan Level I permit, the application shall be forwarded to and reviewed by the City's Public Services Department and the Property and Right-of-way Committee.

A recommendation from both entities shall be forwarded to the department and included as part of the review of the Site Plan Level I application.

4. Review Criteria. In addition to the review criteria for a Site Plan Level I permit, the following shall apply:

- a. The proposed plan meets the standards provided in this Section 47-19.2; and
- b. The plan includes measures to insure there is minimal disruption to existing residents, businesses and traffic in the area.

5. Effective date of approval. The approval of a temporary construction staging area application by the department shall not take effect nor shall a permit be issued any sooner than thirty (30) days after approval and then only if no motion is adopted by the city commission seeking to review the application or no appeal is filed as provided in Section 47-26B, Appeals.

6. Appeal. If a temporary construction staging permit is denied or is approved with conditions

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unacceptable to the applicant, the applicant may appeal the decision in accordance with the procedures provided in Section 47-26B., Appeals.

7. If, during the course of the construction of the public purpose construction project it is found that activities on the construction staging area site are detrimental to the health, safety and welfare of the public as determined by the City Engineer, the applicant shall be given notice of additional measures that must be taken in order to mitigate the negative impact. If the applicant fails to institute such measures within five (5) calendar days of notice, notice shall be given of a hearing to be held before the City Commission and applicant shall be required to address the impacts associated with the staging area site. If the applicant fails to demonstrate how the negative impacts will be mitigated or fails to institute the measures within the time required by the City Commission, the City Commission may terminate the permit.
8. Termination of permit. The temporary construction staging permit shall terminate on the date established by the department or the City Commission as provided in this subsection FF. Upon termination of a temporary construction staging permit the site applicant or property owner shall have thirty (30) days from termination to restore the site to a clean and safe condition with all construction staging materials and debris removed.

SECTION 2. That Table 1 of Section 47-24, Development Permits and Procedures, is hereby amended to add "public project construction staging area" as a Site Plan Level I review, as shown on the Exhibit attached hereto and made a part hereof.

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SECTION 3. That if any clause, section or other part of this Ordinance shall be held invalid or unconstitutional by any court of competent jurisdiction, the remainder of this Ordinance shall not be affected thereby, but shall remain in full force and effect.

SECTION 4. That all ordinances or parts of ordinances in conflict herewith, be and the same are hereby repealed.

SECTION 5. That this Ordinance shall be in full force and effect ten days from the date of final passage.

PASSED FIRST READING this the \_\_\_\_\_ day of \_\_\_\_\_, 2002.  
PASSED SECOND READING this the \_\_\_\_\_ day of \_\_\_\_\_, 2002

\_\_\_\_\_  
Mayor  
JIM NAUGLE

ATTEST

\_\_\_\_\_  
City Clerk  
LUCY MASLIAH

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*Chart 3*

**SECTION 47-24. DEVELOPMENT PERMITS AND PROCEDURES**

**TABLE 1. DEVELOPMENT PERMITS AND PROCEDURES**

Permit	Department	Development Review Committee	Planning & Zoning Board (Local Planning Agency)	Historic Preservation Board	City Commission	Board of Adjustment	Criteria for Review
CENTRAL BEACH AREA DISTRICTS - see Section 47-12 and other regulations provided in this Table 1.	-	-	-	-	-	-	1. Adequacy Review Sec. 47-25.2 2. Neighborhood Compatibility Review Sec. 47-25.3
<b>SITE PLAN-LEVEL I DEPARTMENT</b>							
1. Sidewalk cafe	DP		A		CRR/PZ		1. Adequacy Review Sec. 47-25.2 2. Outdoor Uses, Sidewalk Cafe Sec. 47-19.9
2. Mobile vendor	DP		A		CRR/PZ		1. Adequacy Review Sec. 47-25.2 2. Mobile Vendor, Sec. 47-18.22
3. Residential-less than 5 units	DP		A		CRR/PZ		Adequacy Review Sec. 47-25.2
4. New nonresidential construction-5,000 square feet or less	DP		A		CRR/PZ		Adequacy Review Sec. 47-25.2
5. Modification of waterway lot widths in RS-4.4 & RS-8 Districts	DP		A		CRR/PZ		1. Adequacy Review Sec. 47-25.2 2. Modification of Lot Width, Sec. 47-23.10
6. Change of use-different operation but does not involve development which requires a Site Plan Level II or higher permit-See Sec. 47-3.5.B.a	DP		A		CRR/PZ or Dept.		Nonconforming Uses, Section 47-3

7. Reuse of nonconforming structure	DP		A		CRR/PZ or Dept.		1. Adequacy Review Sec. 47-25.2, and 2. Neighborhood Compatibility Review Sec. 47-25.3 3. Nonconforming Uses, Section 47-3
8. Continuation of nonconforming status	DP		A		CRR/PZ or Dept.		Nonconforming Uses, Section 47-3
9. Approval of off-site parking	DP		A		CRR/PZ or Dept.		Parking and Loading Sec. 47-20.18
10. Temporary Construction Staging	DP				A		Section 47-19.2.FF.
...							
SITE PLAN-LEVEL II DEVELOPMENT REVIEW COMMITTEE							

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## SECTION 01520 – MAINTENANCE OF UTILITY OPERATIONS DURING CONSTRUCTION

PART 1 -- GENERAL

## 1.01 THE REQUIREMENT

- A. The existing elevated water storage tank will be taken out of service by the CITY during the period of the Contract as hereinafter specified. The intent of this Section is to outline the requirements to minimize the least possible disruption to the operation of any of the CITY's existing facilities.
- B. The CONTRACTOR is advised that the work involves the potable water system. The CONTRACTOR shall be fully responsible for all precautionary measures together with all remediation, cleanup, disinfection, regulatory agency fines and all other labor, materials, and costs associated with any contamination of the potable water supply caused directly or indirectly by the activities of the CONTRACTOR in the performance of the work.
- C. Notwithstanding other indemnification requirements of the Contract Documents, the CONTRACTOR shall also indemnify, defend, and hold harmless the CITY, the ENGINEER and the CITY's agents from any and all legal action which may arise from contamination of the potable water supply caused directly or indirectly by the CONTRACTOR in the performance of the work.

## 1.02 GENERAL CONSTRAINTS

- A. The City's potable water transmission system shall be maintained in continuous operation during the construction period except during approved interruptions. All short-term system or partial systems shutdowns shall be approved by the CITY. Long-term process shutdowns and diversions shall conform to the requirements hereinafter specified and shall be minimized by the CONTRACTOR as much as possible. If in the judgment of the CITY, a requested shutdown is not required for the CONTRACTOR to perform the Work, the CONTRACTOR shall utilize approved alternative methods to accomplish the Work. All shutdowns shall be coordinated with and scheduled at times suitable to the CITY. Shutdowns shall not begin until all required materials are on hand and ready for installation. Each shutdown period shall commence at a time approved by the CITY, in writing. Where required in the Construction Sequence, the CONTRACTOR shall proceed with the Work continuously, (24 hours/day, 7 days/week) start to finish, until the Work is completed and normal operation is restored.
- B. If the CONTRACTOR completes all required Work before the specified shutdown period has ended, the CITY may immediately place the existing system back into service.
- C. The CONTRACTOR shall schedule short-term and extended shutdowns in advance and shall present all desired shutdowns in the 30 and 60-day schedules at the construction progress meetings. Shutdowns shall be fully coordinated with the Water Facilities Manager and Chief Operator at least 24 hours before the scheduled shutdown. CITY personnel shall operate CITY's facilities involved in the short-term and extended shutdowns.
- D. Short term shutdowns in flow will be allowed for tie-ins to existing facilities, installation of temporary bulkheads, etc. All such shutdowns shall be scheduled for low-flow period during the daily diurnal water demand (as determined by the Water Facilities Manager) and shall

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generally be limited to four hours or less depending on water demand, system pressure, weather forecast and amount of potable water stored onsite. The schedule and duration of short-term shutdowns shall be at the discretion of the CITY.

- E. Any temporary work, facilities, roads, walks, protection of existing structures, piping, blind flanges, valves, equipment, etc. that may be required within the CONTRACTOR's work limits to maintain continuous and dependable potable water system operation shall be furnished by the CONTRACTOR at no extra cost to the CITY.
- F. The CITY shall have the authority to order Work postponed, stopped or prohibited that would, in his opinion, unreasonably result in interrupting the necessary functions of the potable water transmission / distribution system.
- G. If the CONTRACTOR impairs performance or operation of the potable water transmission system as a result of not complying with specified provisions, then the CONTRACTOR shall immediately make all repairs or replacements and do all work necessary to restore the operation to the satisfaction of the CITY. Such work shall progress continuously to completion on a 24-hours per day, seven work days per week basis.
- H. The CONTRACTOR shall provide the services of emergency repair crews on call 24-hours per day.

#### 1.03 CONSTRUCTION SEQUENCE AND OPERATIONAL CONSTRAINTS

- A. Work under the Contract shall be scheduled and performed in such a manner as to result in the least possible disruption to the operation of any of the CITY's existing facilities.
- B. Critical events in the sequence of construction are specified herein. The outline sequence of construction does not include all items necessary to complete the work, but is intended to identify the sequence of critical events necessary to minimize disruption to the CITY's facilities. It shall be understood by the CONTRACTOR that the critical events identified are not all inclusive and that additional items of work not shown may be required. The sequence of construction is a precedence requirement and does not attempt to schedule the CONTRACTOR's work. It is intended only to indicate which activities must precede other activities in order to minimize interference's and disruptions. The sequence of construction is as follows:
  1. Phase I - Mobilization and Preliminary Sitework: Mobilize for work - set up field offices and staging area, obtain permits, develop and submit construction schedule, shop drawing schedule and begin shop drawing submittals.
  2. Phase II – Removal and Replacement / Repair: Complete removal and replacement / repair of damaged structures of the elevated storage water tank including ladders, railings, grating, hatches, ventilators, piping, conduit, wiring, lighting, etc.
  3. Phase III – Coatings: Complete removal of existing coatings and application of coating systems, including construction of containment facilities, on the water storage tank. Note that there may be overlap between phases II and III.
  4. Phase IV - Project Closeout: Complete project closeout in accordance with Section 01700 – Project Closeout.

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- C. At no time shall the CONTRACTOR undertake to close off any pipelines, or open valves, or take any other action which would affect the operation of the existing system.

## 1.04 MAINTENANCE OF OBSTRUCTION LIGHTING

- A. Throughout the entire length of the project, the CONTRACTOR is responsible for maintenance the aircraft obstruction lights on top of the tank. Lights shall be outside of the temporary containment enclosure and shall be kept energized and in operation. The obstruction lights shall be either the existing lights, the proposed lights or acceptable temporary lights.

PART 2 -- PRODUCTS (Not Used)

PART 3 – EXECUTION (Not Used)

- END OF SECTION -

## PROJECT 11887

## SECTION 01530 - PROTECTION OF EXISTING FACILITIES

PART 1 -- GENERAL

## 1.01 THE REQUIREMENT

- A. CONTRACTOR shall be responsible for the preservation and protection of property adjacent to the work site against damage or injury as a result of his operations under this Contract. Any damage or injury occurring on account of any act, omission or neglect on the part of the CONTRACTOR shall be restored in a proper and satisfactory manner or replaced by and at the expense of the CONTRACTOR to an equal or superior condition than previously existed.
- B. CONTRACTOR shall comply promptly with such safety regulations as may be prescribed by the CITY or the local authorities having jurisdiction and shall, when so directed, properly correct any unsafe conditions created by, or unsafe practices on the part of, his employees. In the event of the CONTRACTOR's failure to comply, the CITY may take the necessary measures to correct the conditions or practices complained of, and all costs thereof will be deducted from any monies due the CONTRACTOR. Failure of the CITY to direct the correction of unsafe conditions or practices shall not relieve the CONTRACTOR of his responsibility hereunder.
- C. In the event of any claims for damage or alleged damage to property as a result of work under this Contract, the CONTRACTOR shall be responsible for all costs in connection with the settlement of or defense against such claims. Prior to commencement of work in the vicinity of property adjacent to the work site, the CONTRACTOR, at his own expense, shall take such surveys as may be necessary to establish the existing condition of the property. Before final payment can be made, the CONTRACTOR shall furnish satisfactory evidence that all claims for damage have been legally settled or sufficient funds to cover such claims have been placed in escrow, or that an adequate bond to cover such claims has been obtained.

## 1.02 PROTECTION OF WORK AND MATERIAL

- A. During the progress of the work and up to the date of final payment, the CONTRACTOR shall be solely responsible for the care and protection of all work and materials covered by the Contract.
- B. All work and materials shall be protected against damage, injury or loss from any cause whatsoever, and the CONTRACTOR shall make good any such damage or loss at his own expense. Protection measures shall be subject to review from the CITY.

## 1.03 BARRICADES, WARNING SIGNS AND LIGHTS

- A. The CONTRACTOR shall provide, erect and maintain as necessary, strong and suitable barricades, danger signs and warning lights along all roads accessible to the public, as required by the authority having jurisdiction, to insure safety to the public. All barricades and obstructions along public roads shall be illuminated at night and all lights for this purpose shall be kept burning from sunset to sunrise.

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- B. CONTRACTOR shall provide and maintain such other warning signs and barricades in areas of and around their respective work as may be required for the safety of all those employed in the work, the CITY's operating personnel, or those visiting the site.

## 1.04 EXISTING UTILITIES AND STRUCTURES

- A. The term existing utilities shall be deemed to refer to both publicly-owned and privately-owned utilities such as electric power and lighting, telephone, water, gas, storm drains, process lines, sanitary sewers and all appurtenant structures.
- B. Where existing utilities and structures are indicated on the Drawings, it shall be understood that all of the existing utilities and structures affecting the work may not be shown and that the locations of those shown are approximate only. It shall be the responsibility of the CONTRACTOR to ascertain the actual extent and exact location of existing utilities and structures. In every instance, the CONTRACTOR shall notify the proper authority having jurisdiction and obtain all necessary directions and approvals before performing any work in the vicinity of existing utilities.
- C. Prior to beginning any excavation work, the CONTRACTOR shall, through field investigations, determine any conflicts or interferences between existing utilities and new utilities to be constructed under this project. This determination shall be based on the actual locations, elevations, slopes, etc., of existing utilities as determined in the field investigations, and locations, elevation, slope, etc. of new utilities as shown on the Drawings. If an interference exists, the CONTRACTOR shall bring it to the attention of the CITY as soon as possible. If the CITY agrees that an interference exists, he shall modify the design as required. Additional costs to the CONTRACTOR for this change shall be processed through a Change Order as detailed elsewhere in these Contract Documents. In the event the CONTRACTOR fails to bring a potential conflict or interference to the attention of the CITY prior to beginning excavation work, any actual conflict or interference which does arise during the Project shall be corrected by the CONTRACTOR, as directed by the CITY, at no additional expense to the CITY.
- D. The work shall be carried out in a manner to prevent disruption of existing services and to avoid damage to the existing utilities. Temporary connections shall be provided, as required, to insure uninterrupted of existing services. Any damage resulting from the work of this Contract shall be promptly repaired by the CONTRACTOR at his own expense in a manner approved by the CITY and further subject to the requirements of any authority having jurisdiction. Where it is required by the authority having jurisdiction that they perform their own repairs or have them done by others, the CONTRACTOR shall be responsible for all costs thereof.
- E. Where excavations by the CONTRACTOR require any utility lines or appurtenant structures to be temporarily supported and otherwise protected during the construction work, such support and protection shall be provided by the CONTRACTOR. All such work shall be performed in a manner satisfactory to the CITY and the respective authority having jurisdiction over such work. In the event the CONTRACTOR fails to provide proper support or protection to any existing utility, the CITY may, at his discretion, have the respective authority to provide such support or protection as may be necessary to insure the safety of such utility, and the costs of such measures shall be paid by the CONTRACTOR.

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## 1.05 TREES WITHIN PROJECT LIMITS

- A. General: The CONTRACTOR shall exercise all necessary precautions so as not to damage or destroy any trees on the project site, and shall not trim or remove any trees unless such trees have been approved for trimming or removal by the jurisdictional agency or CITY. All existing trees which are damaged during construction shall be replaced by the CONTRACTOR or a certified tree company to the satisfaction of the CITY.
- B. Replacement: The CONTRACTOR shall immediately notify the CITY if any tree is damaged by the CONTRACTOR's operations. If, in the opinion of the CITY, the damage is such that replacement is necessary, the CONTRACTOR shall replace the tree at its own expense. The tree shall be of a like size and variety as the tree damaged, or, if of a smaller size, the CONTRACTOR shall pay to the CITY compensatory payment acceptable to the CITY.

## 1.06 NOTIFICATION BY THE CONTRACTOR

- A. Prior to any excavation in the vicinity of any existing underground facilities, including all water, sewer, storm drain, gas, petroleum products, or other pipelines; all buried electric power, communications, or television cables; all traffic signal and street lighting facilities; and all roadway and state highway rights-of-way the CONTRACTOR shall notify the respective authorities representing the owners or agencies responsible for such facilities not less than three days nor more than seven days prior to excavation so that a representative

## 1.07 RESTORATION OF PAVEMENT

- A. General: All paved areas including asphaltic concrete berms cut or damaged during construction shall be replaced with similar materials and of equal thickness to match the existing adjacent undisturbed areas, except where specific resurfacing requirements have been called for in the Contract Documents. All pavements which are subject to partial removal shall be neatly saw cut in straight lines.
- B. Temporary Resurfacing: Wherever required by the public authorities having jurisdiction, the CONTRACTOR shall place temporary surfacing promptly after backfilling and shall maintain such surfacing for the period of time fixed by said authorities before proceeding with the final restoration of improvements.
- C. Permanent Resurfacing: In order to obtain a satisfactory junction with adjacent surfaces, the CONTRACTOR shall saw cut back and trim the edge so as to provide a clean, sound, vertical joint before permanent replacement of an excavated or damaged portion of pavement. Damaged edges of pavement along excavations and elsewhere shall be trimmed back by saw cutting in straight lines. All pavement restoration and other facilities restoration shall be constructed to finish grades compatible with adjacent undisturbed pavement.

PART 2 – PRODUCTS (Not Used)

PART 3 – EXECUTION (Not Used)

- END OF SECTION -

## PROJECT 11887

## SECTION 01540 - DEMOLITION OF EXISTING STRUCTURES AND EQUIPMENT

PART 1 -- GENERAL

## 1.01 THE REQUIREMENT

- A. This Section covers the demolition, removal, and disposal of existing elements of the water storage tank including electrical, ventilating equipment and piping as indicated on the Drawings and as specified hereinafter. The CONTRACTOR shall furnish all labor, materials and equipment to demolish buildings and structures and to remove fixtures, anchors, supports, piping and accessories designated to be removed on the Drawings.
- B. The CONTRACTOR shall demolish and remove existing ladders, railings, gratings, hatches, piping, ventilating equipment, conduits, wiring, or appurtenances or portions thereof, as shown on the Drawings or required to complete the project.
- C. The disposal of all removed items shall be in accordance with all Federal, State and local laws including but not limited to RCRA, Toxic Substance Control Act (STSCA), Hazardous Materials Transportation Act (HMTA), USEPA and the Florida Department of Environmental Protection Solids and Hazardous Waste Section regulations in effect as of the bid date.

## 1.02 TITLE TO EQUIPMENT AND MATERIALS

- A. CONTRACTOR shall have no right or title to any of the equipment, materials or other items to be removed from the existing buildings or structures unless and until said equipment, materials and other items have been removed from the premises. The CONTRACTOR shall not sell or assign, or attempt to sell or assign any interest in the said equipment, materials or other items until the said equipment, materials or other items have been removed.
- B. CONTRACTOR shall have no claim against the CITY because of the absence of such fixtures and materials.

## 1.03 CONDITION OF STRUCTURES AND EQUIPMENT

- A. The CITY does not assume responsibility for the actual condition of structures and equipment to be demolished and removed.
- B. Conditions existing at the time of inspection for bidding purposes will be maintained by the CITY so far as practicable.
- C. The information regarding the existing structures and equipment shown on the Drawings is based on visual inspection and a walk-through survey only. Neither the ENGINEER nor the CITY will be responsible for interpretations or conclusions drawn therefrom by the CONTRACTOR.

PART 2 – PRODUCTS (Not Used)

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PART 3 -- EXECUTION

## 3.01 DEMOLITION AND REMOVALS

- A. The removal of all equipment and piping, and all materials from the demolition operation of structure shall, when released by the CITY, shall be done by the CONTRACTOR and shall become the CONTRACTOR's property, unless otherwise noted, for disposition in any manner not contrary to the Contract requirements and shall be removed from the site to the CONTRACTOR's own place of disposal.
- B. The electrical subcontractor, shall de-energize all panelboards, lighting fixtures, switches, circuit breakers, electrical conduits, motors, limit switches, pressure switches, instrumentation such as flow, level and/or other meters, wiring, and similar power equipment prior to removal. Any electric panels or equipment which are to be retained shall be relocated or isolated by the electrical subcontractor specifically, prior to the removal of the equipment specified herein.
- C. The CONTRACTOR shall proceed with the removal of the equipment, piping and appurtenances in a sequence designed to minimize disruption to the water tank in continuous operation as described in Section 01520, Maintenance of Utility Operations During Construction, and shall proceed only after approval of the CITY.
- D. Any equipment piping and appurtenances removed without proper authorization, which are necessary for the operation of the existing facilities shall be replaced to the satisfaction of the ENGINEER at no cost to the CITY.
- E. Excavation caused by demolitions shall be backfilled with fill free from rubbish and debris.

## 3.02 PROTECTION

- A. Demolition and removal work shall be performed by competent experienced workmen for the various type of demolition and removal work and shall be carried out through to completion with due regard to the safety of CITY employees, workmen on-site and the public. The work shall be performed with as little nuisance as possible.
- B. The work shall comply with the applicable provisions and recommendation of ANSI A10.2, Safety Code for Building Construction, all governing codes, and as hereinafter specified.
- C. The CONTRACTOR shall make such investigations, explorations and probes as are necessary to ascertain any required protective measures before proceeding with demolition and removal. The CONTRACTOR shall give particular attention to shoring and bracing requirements so as to prevent any damage to new or existing construction.
- D. The CONTRACTOR shall provide, erect, and maintain catch platforms, lights, barriers, weather protection, warning signs and other items as required for proper protection of the public, occupants of the building, workmen engaged in demolition operations, and adjacent construction.
- E. The CONTRACTOR shall provide and maintain weather protection at exterior openings so as to fully protect the interior premises against damage from the elements until such openings are closed by new construction.

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- F. The CONTRACTOR shall provide and maintain temporary protection of the existing structure designated to remain where demolition, removal and new work is being done, connections made, materials handled or equipment moved.
- G. The CONTRACTOR shall take necessary precautions to prevent dust from rising by wetting demolished masonry, concrete, plaster and similar debris. Unaltered portions of the existing buildings affected by the operations under this Section shall be protected by dust-proof partitions and other adequate means.
- H. The CONTRACTOR shall provide adequate fire protection in accordance with local Fire Department requirements.
- I. The CONTRACTOR shall not close or obstruct walkways, passageways, or stairways and shall not store or place materials in passageways, stairs or other means of egress. The CONTRACTOR shall conduct operations with minimum traffic interference.
- J. The CONTRACTOR shall be responsible for any damage to the existing structure or contents by reason of the insufficiency of protection provided.

### 3.03 WORKMANSHIP

- A. The demolition and removal work shall be performed as described in the Contract Documents. The work required shall be done with care, and shall include all required shoring, bracing, etc. The CONTRACTOR shall be responsible for any damage which may be caused by demolition and removal work to any part or parts of existing structures or items designated for reuse or to remain. The CONTRACTOR shall perform patching, restoration and new work in accordance with applicable Technical Sections of the Specifications and in accordance with the details shown on the Drawings. Prior to starting of work, the CONTRACTOR shall provide a detailed description of methods and equipment to be used for each operation and the sequence thereof for review by the CITY.
- B. All supports, pedestals and anchors shall be removed with the equipment and piping unless otherwise specified or required. Removal of ladders shall include the removal of the angles use to attach the ladder to the tank. Concrete bases, anchor bolts and other supports shall be removed to approximately 1-inch below the surrounding finished area and the recesses shall be patched to match the adjacent areas. Superstructure wall and roof openings shall be closed, and damaged surfaces shall be patched to match the adjacent areas, as specified under applicable Sections of these Specifications, as shown on the Drawings, or as directed by the CITY. Wall sleeves and castings shall be plugged or blanked off, all openings in concrete shall be closed in a manner meeting the requirements of the appropriate Sections of these Specifications, as shown on the Drawings, and as indicated by the CITY.
- C. Materials or items designated to remain the property of the CITY shall be as hereinafter tabulated. Such items shall be removed with care and stored at a location at the site to be designated by the CITY.
- D. Where equipment is shown or specified to be removed and relocated, the CONTRACTOR shall not proceed with removal of this equipment without specific prior approval of the CITY. Upon approval, and prior to commencing removal operations, the equipment shall be

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operated in the presence of representatives of the CONTRACTOR, CITY and ENGINEER. Such items shall be removed with care, under the supervision of the trade responsible for reinstallation and protected and stored until required. Material or items damaged during removal shall be replaced with similar new material or item. Any equipment that is removed without proper authorization and is required for plant operation shall be replaced at no cost to the CITY.

- E. Wherever piping is to be removed for disposition, the piping shall be drained by the CONTRACTOR and adjacent pipe and headers that are to remain in service shall be blanked off or plugged and then anchored in an approved manner.
- F. Materials or items demolished and not designated to become the property of the CITY or to be reinstalled shall become the property of the CONTRACTOR and shall be removed from the property and legally disposed of.
- G. The CONTRACTOR shall execute the work in a careful and orderly manner, with the least possible disturbance to the public and to the occupants of the building.
- H. In general, masonry shall be demolished in small sections, and where necessary to prevent collapse of any construction, the CONTRACTOR shall install temporary shores, struts, and bracing.
- I. Where alterations occur, or new and old work join, the CONTRACTOR shall cut, remove, patch, repair or refinish the adjacent surfaces to the extent required by the construction conditions, so as to leave the altered work in as good a condition as existed prior to the start of the work. The materials and workmanship employed in the alterations, unless otherwise shown on the Drawing or specified, shall comply with that of the various respective trades which normally perform the particular items or work.
- J. The CONTRACTOR shall finish adjacent existing surfaces to new work to match the specified finish for new work. The CONTRACTOR shall clean existing surfaces of dirt, grease, loose paint, etc., before refinishing.
- K. The CONTRACTOR shall cut out embedded anchorage and attachment items as required to properly provide for patching and repair of the respective finishes.
- L. The CONTRACTOR shall confine cutting of existing roof areas designated to remain to the limits required for the proper installation of the new work. The CONTRACTOR shall cut and remove insulation, etc., and provide temporary weather tight protection as required until new roofing and flashings are installed.
- M. The CONTRACTOR shall remove temporary work, such as enclosures, signs, guards, and the like when such temporary work is no longer required or when directed at the completion of the work.

### 3.04 MAINTENANCE

- A. The CONTRACTOR shall maintain the buildings, structures and public properties free from accumulations of waste, debris and rubbish, caused by the demolition and removal operations.

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- B. The CONTRACTOR shall provide on-site dump containers for collection of waste materials, debris and rubbish, and he shall wet down dry materials to lay down and prevent blowing dust.
- C. At reasonable intervals during the progress of the demolition and removal work or as directed by the CITY, the CONTRACTOR shall clean the site and properties, and dispose of waste materials, debris and rubbish.

## 3.05 EQUIPMENT AND MATERIALS RETAINED BY CITY

- A. Two existing security cameras will be removed and retained by the CITY for reinstallation by the CITY. Coordinate with CITY as required.

## 3.06 JOB CONDITIONS

- A. The CONTRACTOR shall execute the demolition and removal work to prevent damage or injury to structures, occupants thereof and adjacent features which might result from falling debris or other causes, and so as not to interfere with the use, and free and safe passage to and from adjacent structures.
- B. Closing or obstructing of roadways adjacent to the work by the placement or storage of materials will not be permitted. All operations shall be conducted with a minimum interference to traffic on these ways. The CONTRACTOR shall provide temporary rock driveways or access roads as may be required to maintain access by all property owners to their property.
- C. The CONTRACTOR shall repair damage done to facilities to remain, or to any property belonging to the CITY.
- D. The CONTRACTOR shall carry out his operations so as to avoid interference with operations and work in the existing facilities.
- E. At least 48 hours prior to commencement of a demolition or removal, the CONTRACTOR shall notify the CITY in writing of his proposed schedule therefore. No removals shall be started until it is acceptable to the CITY. CONTRACTOR shall notify all property owners affected by the demolition work at least 48 hours prior to the start of any demolition activities.
- F. The CONTRACTOR shall comply with and have documented Confined Space Entry Space Procedures available at the project at all times as required by OSHA 29 CFR 1910.146. The CONTRACTOR shall also comply with any state and/or local requirements if more restrictive than the federal requirements.
- G. The CONTRACTOR shall comply with safe working practices for abrasive blasting, cleaning, burning, welding, and handling lead based and non-lead based coated steel and all health and safety regulations and requirements of Federal OSHA 29 CFR 1926.62, Interim Final Rule on Lead in Construction, state and local health regulatory agencies, Material Safety Data Sheets (MSDS), and the paint and abrasive manufacturers. This requirement shall be accomplished without supervision from the CITY. 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 or added attachments. The CONTRACTOR shall provide portable sanitary toilet and wash-up facilities at the work site.

## PROJECT 11887

- H. The CONTRACTOR shall comply with all local, state and federal regulations concerning emissions or disposal of solid, particulate, liquid, or gaseous matter as a result of the demolition operations. This compliance shall be accomplished without supervision from the CITY. No additional compensations for changes in the laws, regulations, or the interpretation thereof shall be granted by the CITY. No burning of trash on the site shall be permitted. Any fines imposed on the CITY by any regulatory agency as a result of the CONTRACTOR's non-compliance with environmental regulations shall be paid or reimbursed by the CONTRACTOR.
- I. Welding or Cutting Operations: No welding or cutting through the existing coating system shall be permitted unless adequate worker protection is provided and proper personal hygiene practices are followed in accordance with the instructions in ANSI Z49.1, "Safety in Welding and Cutting" and in OSHA 29 CFR 1926.62, Interim Final Rule on lead in construction.
- J. Explosives shall not be used in the execution of this Contract.

## 3.07 DUST CONTROL

- A. The CONTRACTOR shall use temporary enclosures and other suitable methods to limit the amount of dust and dirt rising and scattering in the air to the lowest practical level. Existing electrical and mechanical equipment to remain shall be protected from damage, dust, and debris.

## 3.08 PAINT CONTAINING LEAD

- A. The CONTRACTOR shall comply with all Federal, State and local regulations regarding the handling and disposal of paint containing lead. Refer to Section 09805 for additional requirements.

## 3.09 STATEMENT OF RESPONSIBILITIES REGARDING ASBESTOS

- A. Submit a written advanced notice form a minimum of 10 days prior to initiation of the demolition, removal or disturbance of 160 square feet or more of material to the following.
  1. Broward County Department of Planning  
And Environmental Protection  
Air Quality Division  
218 S.W. 1st Avenue  
Fort Lauderdale, Florida 33301
  2. CITY

- END OF SECTION -

SECTION 01590 - CONSTRUCTION PROJECT SIGN

PART 1 -- GENERAL

Contractor shall furnish a 4' x 8' sign. Below is a sample, not specific to the project. Sign shall be made to be weather resistant and on display for entire length of contract. Shop drawings must be submitted prior to sign construction. The exact style and design of the sign will be provided during the preconstruction meeting.



See Page 2, "Construction Sign Request Form", for information on the sign for this Project.

PART 2 -- PRODUCTS (Not Used)

PART 3 -- EXECUTION (Not Used)

END OF SECTION

# Construction Sign Request Form P11485A

Title (Bold):

Title (Not Bold):

What's Happening?

Benefits:

Number of Neighbors Benefitted:

Cost:

Month and Year of Expected Completion:

Contractor:

Phone: 954-828-8000

We're Working On:

Project Manager Signature

Date

Senior Project Manager Signature

Date

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## SECTION 01600 - MATERIALS AND EQUIPMENT

PART 1 -- GENERAL

## 1.01 THE REQUIREMENT

- A. The CONTRACTOR shall furnish, install, test, and place in acceptable operation all material and equipment and all necessary accessories as specified herein, as shown on the Drawings, and as required for a complete and operable system.
- B. The equipment shall be provided complete with all accessories, special tools, spare parts, mountings, and other appurtenances as specified, and as may be required for a complete and operating installation.
- C. It is the intent of these Specifications that the CONTRACTOR shall provide the CITY complete and operational equipment/systems. To this end, it is the responsibility of the CONTRACTOR to provide necessary ancillary items such as controls, wiring, etc., to make each piece of equipment operational as intended by the Specifications.
- D. Furnish and Install
  - 1. Where the words "furnish", "provide", "supply", "replace", or "install" are used, whether singularly or in combination, they shall mean to furnish and install, unless specifically stated otherwise.
  - 2. In the interest of brevity, the explicit direction "to furnish and install" has sometimes been omitted in specifying materials and/or equipment herein. Unless specifically noted otherwise, it shall be understood that all equipment and/or materials specified or shown on the Drawings shall be furnished and installed under the Contract as designated on the Drawings.

## 1.02 JOB SITE DELIVERY TIMING

- A. Equipment and materials to be incorporated into the work shall be delivered sufficiently in advance of their installation and use to prevent delay in the execution of the work, and they shall be delivered as nearly as feasible in the order required for executing the work.
- B. The CONTRACTOR shall not deliver to the job site equipment and materials that are not scheduled to be incorporated into the work within the following 120 calendar days.

## 1.03 REFERENCE SPECIFICATIONS, CODES, AND STANDARDS

- A. All equipment, materials, and installations shall conform to the requirements of the most recent editions with latest revisions, supplements, and amendments of the specifications, codes, and standards listed in Section 01090, Reference Standards.

## PROJECT 11887

## 1.10 SUBSTITUTIONS

- A. Requests for substitutions of equipment or materials shall conform to the requirements of the General Conditions, Supplemental Conditions, and as hereinafter specified.
1. CONTRACTOR shall submit for each proposed substitution sufficient details, complete descriptive literature and performance data together with samples of the materials, where feasible, to enable the CITY to determine if the proposed substitution is equal.
  2. CONTRACTOR shall submit certified tests, where applicable, by an independent laboratory attesting that the proposed substitution is equal.
  3. A list of installations where the proposed substitution is equal.
  4. Requests for substitutions shall include full information concerning differences in cost, and any savings in cost resulting from such substitutions shall be passed on to the CITY.
- B. Where the approval of a substitution requires revision or redesign of any part of the work, including that of other Contracts, all such revision and redesign, and all new drawings and details therefore, shall be provided by the CONTRACTOR at his own cost and expense, and shall be subject to the approval of the CITY.
- C. In the event that the ENGINEER is required to provide additional engineering services, then the ENGINEER's charges for such additional services shall be charged to the CONTRACTOR by the CITY in accordance with the requirements of the General Conditions, and the Supplemental Conditions.
- D. In all cases the CITY shall be the judge as to whether a proposed substitution is to be approved. The CONTRACTOR shall abide by their decision when proposed substitute items are judged to be unacceptable and shall in such instances furnish the item specified or indicated. No substitute items shall be used in the work without written approval of the CITY.
- E. CONTRACTOR shall have and make no claim for an extension of time or for damages by reason of the time taken by the ENGINEER in considering a substitution proposed by the CONTRACTOR or by reason of the failure of the ENGINEER to approve a substitution proposed by the CONTRACTOR.
- F. Acceptance of any proposed substitution shall in no way release the CONTRACTOR from any of the provisions of the Contract Documents.

PART 2 -- PRODUCTS

## 2.01 GENERAL

- A. All parts of the equipment furnished shall be amply designed and constructed for the maximum stresses occurring during fabrication, erection, and continuous operation.

## PROJECT 11887

- B. All materials shall be new and both workmanship and materials shall be of the very best quality, entirely suitable for the service to which the unit is to be subjected and shall conform to all applicable sections of these Specifications.
- C. All parts of duplicate equipment shall be interchangeable without modification. Manufacturer's design shall accommodate all the requirements of these Specifications.
- D. All bearings and moving parts shall be adequately protected by bushings or other approved means against wear, and provision shall be made for adequate lubrication by readily accessible devices.
- E. All equipment or component of equipment (e.g., motors) greater than 100 pounds shall have lifting lugs, eyebolts, etc., for ease of lifting, without damage or undue stress exerted on its components.
- F. Provide manufacturer's standard materials suitable for service conditions, unless otherwise specified in the individual Specifications.
- G. Where product specifications include a named manufacturer, with or without model number, and also include performance requirements, named manufacturer's products must meet the performance specifications.
- H. Like items of products furnished and installed in the Work shall be end products of one manufacturer and of the same series or family of models to achieve standardization for appearance, operation and maintenance, spare parts and replacement, manufacturer's services, and implement same or similar process instrumentation and control functions in same or similar manner.
- I. Do not use materials and equipment removed from existing premises, except as specifically permitted by Contract Documents.
- J. Provide interchangeable components of the same manufacturer, for similar components, unless otherwise specified.
- K. Equipment, Components, Systems, Subsystems: Design and manufacture with due regard for health and safety of operation, maintenance, and accessibility, durability of parts, and shall comply with applicable OSHA, state, and local health and safety regulations.
- L. Regulatory Requirement: Coating materials shall meet federal, state, and local requirements limiting the emission of volatile organic compounds and for worker exposure.
- M. Safety Guards: All rotating shafts, couplings, or other moving pieces of equipment shall be provided with suitable protective guards of sheet metal or wire mesh, neatly and rigidly supported. Guards shall be removable as required to provide access for repairs.
- N. Provide materials and equipment listed by UL wherever standards have been established by that agency.

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## 2.02 EQUIPMENT FOUNDATIONS, SUPPORTS AND ANCHORS

- A. The CONTRACTOR shall provide concrete foundations/bases for all equipment items including mechanical equipment, tanks, control cabinets, etc. Concrete foundations shall be provided whether shown on the drawings or not.
- B. Concrete foundations shall be a minimum of 4-inches thick unless otherwise shown or detailed on the Drawings. Equipment bases shall be tied into floor slabs by means of reinforcing bars or dowels. Foundation drawings shall be submitted to the CITY for review in accordance with the requirements of the Section entitled "Submittals".
- C. All equipment supports, anchors, and restrainers shall be adequately designed for static, dynamic, and seismic loads. A seismic force of 0.25 of gravity shall be assumed for this purpose, unless otherwise required by local conditions.
- D. Anchor bolts and fasteners shall be of number, size, strength, and material required for the purpose intended and shall be in accordance with section entitled "Metal Fastening", and with the detailed equipment Specifications. Anchor bolts and templates for equipment foundations shall be furnished by the CONTRACTOR.
- E. Pipe sleeves or other means of adjusting anchor bolts shall be provided where indicated or required. Equipment shall be leveled by first using sitting nuts on the anchor bolts, and then filling the space between the equipment base and concrete pedestal with non-shrink grout, unless alternate methods are recommended by the manufacturer and are acceptable to the CITY (such as shim leveling pumps). Non-shrink grout shall be as specified in section entitled "Grout".

## 2.03 STANDARDIZATION OF GREASE FITTINGS

- A. The grease fittings on all mechanical equipment shall be such that they can be serviced with a single type of grease gun. Fittings shall be hydraulic type, Alemite.

## 2.04 ACCESSORIES, LUBRICANTS, SPARE PARTS, AND SPECIAL TOOLS

- A. Spare parts for equipment shall be furnished where indicated in the equipment Specifications or where recommended by the equipment manufacturer.
- B. Spare parts shall be identical and interchangeable with original parts.
- C. Parts shall be supplied in clearly identified containers, except that large or bulky items may be wrapped in polyethylene.
- D. Painting requirements for spare parts shall be identical to those for original, installed parts.
- E. Spare parts shall be stored separately in a locked area, maintained by the CONTRACTOR, and shall be turned over to the CITY in a group prior to substantial completion. All of these materials shall be properly packed, labeled, and stored where directed by the CITY.
- F. CONTRACTOR shall submit, for approval by the CITY, a complete list of the special tools and appliances to be furnished. Such tools and appliances shall be furnished in approved painted steel cases, properly labeled and equipped with good grade cylinder locks and duplicate keys.

## PROJECT 11887

- G. The CONTRACTOR shall furnish all special tools and appliances necessary to operate, disassemble, service, repair, and adjust the equipment and shall furnish a one year supply of all recommended lubricating oils and greases. The manufacturer shall submit a list of at least four manufacturer's standard lubricants that may be used interchangeably for each type of lubricant required. All of these materials shall be properly packed, labeled and stored where directed by the CITY.

PART 3 -- EXECUTION

## 3.01 DELIVERY, UNLOADING AND INSPECTION

- A. The CONTRACTOR shall not deliver to the job site equipment and materials that are not scheduled to be incorporated into the work within the following 120 calendar days.
- B. Deliver products in accordance with accepted current progress schedule and coordinate to avoid conflict with the Work and conditions at site. Deliver anchor bolts and templates sufficiently early to permit setting prior to placement of structural concrete.
- C. Deliver products in undamaged condition, in manufacturer's original container or packaging, with identifying labels intact and legible. Include on label, date of manufacture and shelf life, where applicable. Include UL labels on products so specified.
- D. Unload products in accordance with manufacturer's instructions for unloading or as specified. Record receipt of products at site. Inspect for completeness and evidence of damage during shipment.
- E. Remove damaged products from site and expedite delivery of identical new undamaged products, and remedy incomplete or lost products to provide that specified, so as not to delay progress of the Work. Delays to the Work resulting from material or equipment damage that necessitates procurement of new products will be considered delays within CONTRACTOR's control.
- F. Notify CITY upon arrival of major equipment and materials.

## 3.02 HANDLING, STORAGE AND PROTECTION

- A. CONTRACTOR shall store his equipment and materials at the job site in accordance with the requirements of the General Conditions, the Supplemental Conditions, and as hereinafter specified.
- B. All equipment and materials shall be stored in accordance with manufacturer's recommendations and as directed by the CITY, and in conformity to applicable statutes, ordinances, regulations and rulings of the public authority having jurisdiction and in manner to prevent damage.
- C. Equipment and materials stored in the job site, or offsite in a bonded warehouse, is stored at the CONTRACTOR's risk. Any equipment or materials of whatever kind, which may have become damaged or deteriorated from any cause, shall be removed and replaced by items that are satisfactory to the CITY at no expense to the CITY.

## PROJECT 11887

- D. Arrange storage in a manner to provide easy access for inspection and manufacturer's recommended maintenance. Make periodic inspections of stored products to assure that products are maintained under specified conditions, and free from damage or deterioration. Keep running account of products in storage to facilitate inspection and to estimate progress payments for products delivered, but not installed in the Work.
- E. Store electrical, instrumentation, and control products, and equipment with bearings in weather-tight structures maintained above 60 degrees F. Protect electrical, instrumentation, and control products, and insulation against moisture, water, and dust damage.
- F. Where space or strip heaters are provided within the enclosure for motors, valve operators, motor starters, panels, instruments, or other electrical equipment, the CONTRACTOR shall make connections to these heaters from an appropriate power source and operate the heaters continuously with temperature control as necessary until the equipment is installed and being operated according to its intended use.
- G. Store fabricated products above ground on blocking or skids, and prevent soiling or staining. Store loose granular materials in well-drained area on solid surface to prevent mixing with foreign matter. Cover products that are subject to deterioration with impervious sheet coverings; provide adequate ventilation to avoid condensation.
- H. CONTRACTOR shall not store equipment and materials or encroach upon private property without the written consent of the owners of such private property.
- I. CONTRACTOR shall not store unnecessary materials or equipment on the job site.
- J. CONTRACTOR shall take care to prevent any structure from being loaded with a weight which will endanger its security or the safety of persons.
- K. Materials shall not be placed within ten feet of fire hydrants. Gutters, drainage channels and inlets shall be kept unobstructed at all times.
- L. CONTRACTOR shall provide adequate temporary storage buildings/facilities, if required, to protect materials or equipment on the job site.

## 3.03 INSTALLATION

- A. The CONTRACTOR shall obtain written installation manuals from the equipment manufacturer prior to installation. Equipment shall be installed strictly in accordance with recommendations of the manufacturer. The CONTRACTOR shall retain a copy of the manufacturer's installation manuals on site, stored in the CONTRACTOR's field office and available for review at all times.
- B. The CONTRACTOR shall have on hand sufficient personnel, proper construction equipment, and machinery of ample capacity to facilitate the work and to handle all emergencies normally encountered in work of this character. To minimize field erection problems, mechanical units shall be factory-assembled insofar as practical.
- C. Equipment shall be erected in a neat and workmanlike manner on the foundations at the locations and elevations shown on the Drawings.

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- D. All blocking and wedging required for the proper support and leveling of equipment during installation shall be furnished by the CONTRACTOR. All temporary supports shall be removed, except steel wedges and shims, which may be left in place with the approval of the CITY.
- E. When motors are shipped separately from driven equipment, the motors shall be received, stored, meggered once a month, and the reports submitted to the CITY. After driven equipment is set, the motors shall be set, mounted, shimmed, millrighted, coupled and connected complete.

## 3.04 CONNECTIONS TO EQUIPMENT

- A. Connections to equipment shall follow manufacturer's recommendations as to size and arrangement of connections and/or as shown in detail on the Drawings or approved Shop Drawings. Piping connections shall be made to permit ready disconnection of equipment with minimum disturbance of adjoining piping and equipment.
- B. The CONTRACTOR shall be responsible for bringing proper electrical service to each item of equipment requiring electrical service as shown on the Drawings or approved Shop Drawings. The CONTRACTOR shall make electrical connections to equipment requiring electrical service, unless otherwise indicated on the Drawings or in the Technical Specifications.

## 3.05 FAILURE OF EQUIPMENT TO PERFORM

- A. Any defects in the equipment, or failure to meet the guarantees or performance requirements of the Specifications shall be promptly corrected by the CONTRACTOR by replacements or otherwise.
- B. If the CONTRACTOR fails to make these corrections, or if the improved equipment shall fail again to meet the guarantees or specified requirements, the CITY, notwithstanding his having made partial payment for work and materials which have entered into the manufacture of said equipment, may reject said equipment and order the CONTRACTOR to remove it from the premises at the CONTRACTOR's expense.
- C. The CONTRACTOR shall then obtain specified equipment to meet the contract requirements or upon mutual agreement with the CITY, adjust the contract price to reflect not supplying the specific equipment item.
- D. In case the CITY rejects said equipment, then the CONTRACTOR hereby agrees to repay to the CITY all sums of money paid to him for said rejected equipment on progress certificates or otherwise on account of the lump sum prices herein specified.
- E. Upon receipt of said sums of money, the CITY will execute and deliver to the CONTRACTOR a bill of sale of all his rights, title, and interest in and to said rejected equipment; provided, however, that said equipment shall not be removed from the premises until the CITY obtains from other sources other equipment to take the place of that rejected.
- F. Said bill of sale shall not abrogate CITY's right to recover damages for delays, losses, or other conditions arising out of the basic contract.

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## 3.06 PAINTING

- A. All surface preparation, shop painting, field repairs, finish painting, and other pertinent detailed painting specifications shall conform to applicable sections of Section 09900, Painting.

## 3.07 WELDING

- A. The Equipment Manufacturer's shop welding procedures, welders, and welding operators shall be qualified and certified in accordance with the requirement of AWS D1.1 "Structural Welding Code - Steel" or AWS D1.2 "Structural Welding Code - Aluminum" of the American Welding Society, as applicable.
- B. The Equipment Manufacturer's shop drawings shall clearly show complete information regarding location, type, size, and length of all welds in accordance with "Standard Welding Symbols" AWS A2.0 of the American Welding Society. Special conditions shall be fully explained by notes and details.
- C. The CONTRACTOR's welding procedures, welders, and welding operators shall be qualified and certified in accordance with the requirements of AWS D1.1 "Structural Welding Code - Steel" or AWS D1.2 "Structural Welding Code - Aluminum" of the American Welding Society, as applicable.
- D. The CONTRACTOR shall perform all field welding in conformance with the information shown on the Equipment Manufacturer's drawings regarding location, type, size, and length of all welds in accordance with "Standard Welding Symbols" AWS A2.0 of the American Welding Society, and special conditions, as shown by notes and details.

- END OF SECTION -

## PROJECT 11887

## SECTION 01700 - PROJECT CLOSEOUT

PART 1 -- GENERAL

## 1.01 THE REQUIREMENT

## A. Final Cleaning

1. At the completion of the work, the CONTRACTOR shall remove all rubbish from and about the site of the work, and all temporary structures, construction signs, tools, scaffolding, materials, supplies and equipment which he or any of his Subcontractors may have used in the performance of the work. CONTRACTOR shall broom clean paved surfaces and rake clean other surfaces of grounds.
2. CONTRACTOR shall maintain cleaning until project, or portion thereof, is occupied by the CITY.

## B. Spare Parts

1. As soon as practicable after approval of the list of equipment, the CONTRACTOR shall furnish unopened paint containers as indicated in Division 9.

## C. Final Cleanup; Site Rehabilitation

1. Before finally leaving the site, the CONTRACTOR shall wash and clean all exposed surfaces which have become soiled or marked, and shall remove from the site of work all accumulated debris and surplus materials of any kind which result from his operation, including construction equipment, tools, sheds, sanitary enclosures, etc. The CONTRACTOR shall leave all equipment, fixtures, and work, which he has installed, in a clean condition. The completed project shall be turned over to the CITY in a neat and orderly condition.
2. The site of the work shall be rehabilitated or developed in accordance with other sections of the Specifications and the Drawings. In the absence of any portion of these requirements, the CONTRACTOR shall completely rehabilitate the site to a condition and appearance equal or superior to that which existed just prior to construction, except for those items whose permanent removal or relocation was required in the Contract Documents or ordered by the CITY.

## D. Final Inspection

1. Final cleaning and repairing shall be so arranged as to be finished upon completion of the construction work. The CONTRACTOR will make his final cleaning and repairing, and any portion of the work finally inspected and accepted by the ENGINEER shall be kept clean by the CONTRACTOR, until the final acceptance of the entire work.
2. When the CONTRACTOR has finally cleaned and repaired the whole or any portion of the work, he shall notify the CITY that he is ready for final inspection of the whole or a portion of the work, and the ENGINEER will thereupon inspect the work. If the

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work is not found satisfactory, the CITY will order further cleaning, repairs, or replacement.

3. When such further cleaning or repairing is completed, the ENGINEER, upon further notice, will again inspect the work. The "Final Payment" will not be processed until the CONTRACTOR has complied with 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.

E. Project Close Out

1. As construction of the project enters the final stages of completion, the CONTRACTOR shall, in concert with accomplishing the requirements set forth in the Contract Documents, attend to or have already completed the following items as they apply to his contract:
  - a. Scheduling fall protection equipment manufacturers' visits to site.
  - b. Required testing of project components.
  - c. Correcting or replacing defective work, including completion of items previously overlooked or work which remains incomplete, all as evidenced by the ENGINEER's "Punch" Lists.
  - d. Attend to any other items listed herein or brought to the CONTRACTOR's attention by the CITY.
  - e. Identification of the proposed one year anniversary inspection date.
2. Just before the CITY's Certificate of Substantial Completion is issued, the CONTRACTOR shall accomplish the cleaning and final adjustment of the various building components as specified in the Specifications.
3. In addition, and before the Certificate of Substantial Completion is issued, the CONTRACTOR shall submit to the CITY certain records, certifications, etc., which are specified elsewhere in the Contract Documents. A partial list of such items appears below, but it shall be the CONTRACTOR's responsibility to submit any other items which are required in the Contract Documents:
  - a. Test results of project components.
  - b. Certification of compliance with Contract Documents.
  - c. One set of neatly marked-up record drawings showing as-built changes and additions to the work under his Contract.
  - d. Any special guarantees or bonds (Submit to CITY).

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4. The CONTRACTOR's attention is directed to the fact that required certifications and information under Item 3 above, must actually be submitted earlier in accordance with other Sections of the Specifications.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

- END OF SECTION -

**DIVISION 2**  
**SITE WORK**



## PROJECT 11887

## SECTION 02668 – HYDRAULIC STRUCTURES DISINFECTION

PART 1 -- GENERAL

## 1.01 THE REQUIREMENT

- A. The CONTRACTOR shall perform all cleaning and disinfection of the water storage tank and appurtenant piping, including conveyance of test water from CITY-designated source to point of use, and including all disposal thereof, complete and acceptable, all in accordance with the requirements of the Contract Documents.

PART 2 – PRODUCTS (Not Used)PART 3 -- EXECUTION

## 3.01 GENERAL

- A. Water for disinfection of the tank will be furnished by the CITY. The CONTRACTOR shall make all necessary provisions for conveying the water from the source to the points of use.
- B. Disinfection operations shall be scheduled by the CONTRACTOR as late as possible during the contract time period to assure the maximum degree of sterility of the facilities at the time that the project is to be placed into service. Bacteriological testing shall be performed by a certified testing laboratory approved by the CITY, at the CONTRACTOR's expense. Testing procedures and bacteriological results shall be acceptable to the Broward County Health Department.
- C. Release and disposal of water from structures, after testing has been completed, shall be as acceptable to the CITY.

## 3.02 DISINFECTION OF STRUCTURES

- A. Prior to disinfection, structures shall be cleaned thoroughly by scrubbing with an approved cleaning agent and then hosing down all surfaces with a high pressure hose and nozzle of sufficient size to deliver a minimum flow of 50 gpm. All water, dirt and foreign material accumulated during this cleaning operation shall be discharged from the structure or otherwise removed.
- B. All structures which store or convey potable water shall be disinfected by chlorination. Chlorination of structures shall be performed in accordance with the requirements of ANSI/AWWA C652 entitled, *Disinfection of Water-Storage Facilities*, using a combination of chlorination Methods 2 and 3 as modified herein.
- C. Chlorination: A strong chlorine solution of approximately 200 mg/L shall be sprayed on all interior surfaces of the structure. Following this, the structure shall be partially filled with approximately 50,000 gallons of water and chlorine as per AWWA C652 chlorination method 3. During the partial filling operation, a chlorine water mixture shall be injected by means of a solution-feed chlorinating device in such a way as to give a uniform chlorine

## PROJECT 11887

concentration during the entire filling operation. The point of application shall be such that the chlorine solution will mix readily with the inflowing water. The dosage applied to the water shall be sufficient to provide a chlorine residual of at least 50 mg/L upon completion of the partial filling operation. Precautions shall be taken to prevent the strong chlorine solution from flowing back into the lines supplying the water. After the partial filling has been completed, sufficient water shall be drained from the lower ends of appurtenant piping to ensure filling the lines with the heavily chlorinated water.

- D. Retention Period: Chlorinated water shall be retained in the partially filled structure and appurtenant piping long enough to destroy all non-spore-forming bacteria, and in any event, for at least 24 hours. After the chlorine-treated water has been retained for the required time, the free chlorine residual in the structure and appurtenant piping shall be at least 25 mg/L when tested according to Standard Methods. All valves shall be operated while the lines are filled with the heavily chlorinated water.
- E. Final Filling of Structure: After the free chlorine residual has been checked, and has been found to satisfy the above requirement, the water level in the structure shall be raised to its final elevation by addition of potable water and held for 24 hours. Before final filling is commenced, the quantity of heavily-chlorinated water remaining in the structure after filling the piping shall, unless otherwise acceptable to the CITY, be sufficient, when the water level is raised to its final elevation to produce a free chlorine residual of between 1 and 2 mg/L. After the structures have been filled, the strength of the chlorinated water shall be determined. If the free chlorine residual is less than 1 mg/L, an additional dosage shall be applied to the water in the structure. After 24 hours, the free chlorine residual shall be no less than 1 mg/L or an additional dosage shall be applied and the residual tested again after 24 hours. If the free chlorine residual is greater than 2 mg/L, the structure shall be partially emptied and additional potable water added. In no case shall water be released prior to the expiration of the required retention period.

### 3.03 BACTERIOLOGICAL SAMPLING AND TESTING

- A. Disinfected water storage facilities shall be sampled and tested in accordance with ANSI/AWWA C652.

- END OF SECTION -

**DIVISION 5**

**METALS**



## PROJECT 11997

## SECTION 05010 - METAL MATERIALS

PART 1 -- GENERAL

## 1.01 THE REQUIREMENT

- A. Metal materials not otherwise specified shall conform to the requirements of this Section.

## 1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Requirements for specific products made from the materials specified herein are included in other sections of the Specifications. See the section for the specific item in question.

## 1.03 REFERENCE SPECIFICATIONS, CODES AND STANDARDS

- |    |             |  |
|----|-------------|--|
| A. | ASTM A 36   | Standard Specification for Structural Steel  |
| B. | ASTM A 47   | Standard Specification for Ferritic Malleable Iron Castings  |
| C. | ASTM A 48   | Standard Specification for Gray Iron Castings  |
| D. | ASTM A 53   | Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated Welded and Seamless                          |
| E. | ASTM A 167  | Standard Specification for Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip                  |
| F. | ASTM A 276  | Standard Specification for Stainless Steel Bars and Shapes   |
| G. | ASTM A 307  | Standard Specification for Carbon Steel Bolt and Studs, 60,000 psi Tensile Strength                                    |
| H. | ASTM A 653  | Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process, Structural (Physical) quality |
| I. | ASTM A 500  | Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes         |
| J. | ASTM A 501  | Standard Specification for Hot-Formed Welded and Seamless Carbon Steel Structural Tubing                               |
| K. | ASTM A 529  | Standard Specification for High Strength Carbon-Manganese Steel of Structural Quality                                  |
| L. | ASTM A 536  | Standard Specification for Ductile Iron Castings   |
| M. | ASTM A 1011 | Steel, Sheet and Strip, Carbon, Hot Rolled   |

## PROJECT 11997

- N. ASTM A 572 /  
ASTM A 572 M94C Standard Specification for High Strength Low-Alloy Columbium-Vanadium Structural Steel
- O. ASTM A 666 Standard Specification for Annealed or Cold-worked Austenitic Stainless Steel, Sheet, Strip, Plate, and Flat Bar for Structural Applications
- P. ASTM B 26 Standard Specification for Aluminum-Alloy Sand Castings
- Q. ASTM B 85 Standard Specification for Aluminum-Alloy Die Castings
- R. ASTM B 108 Standard Specification for Aluminum-Alloy Permanent Mold Castings
- S. ASTM B 138 Standard Specification for Manganese Bronze Rod, Bar, and Shapes
- T. ASTM B 209 Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate
- U. ASTM B 221 Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Shapes, and Tubes
- V. ASTM B 308 Standard Specification for Aluminum-Alloy 6061-T6 Standard Structural Profiles
- W. ASTM B 574 Standard Specification for Low-Carbon Nickel-Molybdenum-Chromium Alloy Rod
- X. ASTM F 468 Standard Specification for Nonferrous Bolts, Hex Cap Screws, and Studs for General Use

## 1.04 SUBMITTALS

- A. Material certifications shall be submitted along with any shop drawings for metal products and fabrications required by other sections of the Specifications.

## 1.05 QUALITY ASSURANCE

- A. CITY may engage the services of a testing agency to test any metal materials for conformance with the material requirements herein. If the material is found to be in conformance with Specifications the cost of testing will be borne by the CITY. If the material does not conform to the Specifications, the cost of testing shall be paid by the CONTRACTOR and all materials not in conformance as determined by the CITY shall be replaced by the CONTRACTOR at no additional cost to the CITY. In lieu of replacing materials the CONTRACTOR may request further testing to determine conformance, but any such testing shall be paid for by the CONTRACTOR regardless of outcome of such testing.

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PART 2 -- PRODUCTS

## 2.01 CARBON AND LOW ALLOY STEEL

A. Material types and ASTM designations shall be as listed below:

- |   |                          |
|---|--------------------------|
| 1. Plates and Structural Fabrications                       | A572 Grade 50            |
| 2. Sheet Steel  | A 570 Grade C            |
| 3. Bars and Rods  | A 36 or A307 Grade A     |
| 4. Pipe - Structural Use                                    | A53 Type E or S, Grade B |
| 5. Tubes  | A500 Grade B or A501     |
| 6. Cold-Formed Structural Studs and Joists<br>(18-22 gauge) | A 653 Grade C            |
| 7. Cold-Formed Structural Studs and Joists<br>(12-16 gauge) | A 653 Grade D            |

## 2.02 STAINLESS STEEL

A. All stainless steel fabrications shall be Type 316.

B. Material types and ASTM designations are listed below:

- |                      |                             |
|----------------------|-----------------------------|
| 1. Plates and Sheets | ASTM A 167 or A 666 Grade A |
| 2. Structural Shapes | ASTM A 276                  |

## 2.03 ALUMINUM

A. All aluminum shall be alloy 6061-T6, unless otherwise noted or specified herein.

B. Material types and ASTM designations are listed below:

- |                                    |                          |
|------------------------------------|--------------------------|
| 1. Structural Shapes               | ASTM B 308               |
| 2. Castings                        | ASTM B26, B 85, or B 108 |
| 3. Extruded Bars                   | ASTM B 221 - Alloy 6061  |
| 4. Extruded Rods, Shapes and Tubes | ASTM B 221 - Alloy 6063  |
| 5. Plates                          | ASTM B 209 - Alloy 6061  |
| 6. Sheets                          | ASTM B 221 - Alloy 3003  |

C. All aluminum shall be provided with mill finish unless otherwise noted.

D. Where bolted connections are indicated, aluminum shall be fastened with Type 316 stainless steel bolts.

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- E. Aluminum in contact with dissimilar materials shall be insulated with an approved dielectric.

2.04 CAST IRON

- A. Material types and ASTM designations are listed below:

- 1. Gray ASTM A 48 Class 30B
- 2. Malleable ASTM A 47
- 3. Ductile ASTM A 536 Grade 60-40-18

2.05 BRONZE

- A. Material types and ASTM designations are listed below:

- 1. Rods, Bars and Sheets ASTM B 138 - Alloy B Soft

PART 3 – EXECUTION (Not Used)

- END OF SECTION -

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SECTION 05500 - METAL FABRICATIONS

PART 1 -- GENERAL

1.01 SCOPE OF WORK

- A. This Section consists of metal fabrications as shown on the Drawings and specified herein for a complete installation.

1.02 SUBMITTALS

- A. The CONTRACTOR shall submit Shop Drawings and other information to the CITY for review in accordance with Division 1 - General Requirements. No fabrication shall be started until Shop Drawings have been reviewed by the CITY. The Drawings shall be made in conformity with standard practice and indicate: fabrication, assembly and erection details, sizes of members, profiles, fastenings, supports and anchors, finishes, patterns, clearances, and connections to other work.

PART 2 -- PRODUCTS

2.01 MATERIALS

- A. All materials shall be of the best quality and entirely suited for the particular service. Metals shall be free from defects and have structural properties to safely render required service.
- B. Fastenings shall, insofar as practicable, be non-corrosive, non-staining and concealed. Exposed welds shall be ground smooth to form a neat uniform fillet without weakening base metal. Unexposed welds shall have all slag removed before applying shop coating. Molded, bent or shaped members shall be formed and clean, sharp rises, without dents, scratches, cracks or other defects. All anchors, bolts, shims and accessory items shall be provided as required for building into or fastening to adjacent work. All ferrous metals shall be galvanized, except as otherwise specified.
- C. Unless otherwise specified on the Drawings, the miscellaneous metal work shall be equal to or exceed the requirements of the following standards:

<u>Carbon and Low Alloy Steel</u>	<u>ASTM Designation</u>
Plates and Structural Fabrication	A 36, A 529 or A 283, Grade C
Sheet Steel	A 570, Grade C
Bars and Rods	A 36 or A 306, Grade 60
Pipe - general use process pipe	A 53 or A 120 Schedule 40

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A 524 Grade I

Fasteners\*

Standard Strength Bolts	A 307, Grade A
High Strength Bolts	A 325
Eyebolts	A 489

Steel Coatings

Zinc - Electrodeposited	A 164
Hot Dipped	A 123 and A 386
Cadmium	A 165

Stainless Steel

Plate and Sheets	A 167, Type 316
Bars and Shapes	A 276, Type 316
Fasteners*	A 167 and A 276, Type 316

Cast Iron

Gray	A 48, Class 30B
Malleable	A 47
Ductile	A 536, Grade 60-40-18

Wrought Iron

Plates	A 42
Sheets	A 162
Shapes and Bars	A 207
Pipe	A 72

Bronze

Rods, Bars, and Shapes	B 138, Alloy B Soft
<u>Fasteners</u>	
Yellow Brass Cap Screws and Other Small Fasteners	B 16, B 36, or B 134
Silicon Bronze Bolts	B 97, B 98, B 99 and B 124

\* All fasteners shall be manufactured in the U.S.A. Certifications of compliance shall be submitted for all fasteners supplied on this project.

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Aluminum

Structural Shapes	B 308, Alloy 6061-T6
Castings	B 26, B 85 and B 108
Extruded Bars, Rods and Tubes	B 221 Bars - Alloy 6061 Other - Alloy 6063
Plates and Sheet	B 209 Plates - Alloy 6061 Sheets - Alloy 3003
Roof / Wall Panels	Aclad 3004

- D. Materials with more than one specification or grade listed shall conform to specification or grade providing the highest strength and appropriate mechanical properties for the fabrication technique used.

## 2.02 PROTECTIVE COATINGS

- A. All ferrous metal, except stainless steel and galvanized surfaces, shall be properly cleaned and given one shop coat of primer compatible with the coating system specified in Section 09900 - Painting. Metal work, including anchors, to be encased in concrete shall be shop primed unless specified to be stainless steel or galvanized. Castings that are to be left unpainted shall be cleaned and coated with a coal-tar-pitch varnish.
- B. Hot-dip galvanizing or zinc coatings applied on products fabricated from rolled, pressed or forged steel shapes, plates, bars and strips shall comply with ASTM A 123. Hot-dip galvanizing or zinc coatings on assembled steel products shall comply with ASTM A 386. The weight of coatings shall be designated in the table above for the class and thickness of material to be coated.
- C. Galvanized surfaces for which a shop coat of paint is specified shall be chemically treated to provide a bond for the paint. Except for bolts and nuts, all galvanizing shall be done after fabrication.
- D. Aluminum to be placed adjacent to masonry, concrete or dissimilar metals shall be protected with an isolating coating of bitumastic and/or felt.

## 2.03 STEEL

- A. Unless otherwise noted, all steel shall conform to the following:
1. Stainless steel floor plates shall conform to ASTM A 793 and shall be furnished with checkered design.
  2. Galvanized steel pipe shall conform to ASTM A 53.

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3. Carbon steel bolts and fasteners shall conform to ASTM A 307 and shall be galvanized.
4. Carbon steel rails, 40 pound, shall conform to the dimensions listed in AISC Specifications.
5. Other steel shall be mild steel.
6. All stainless steel anchor bolts and fasteners shall be of Type 316 stainless steel.

## 2.04 STRUCTURAL AND MISCELLANEOUS ALUMINUM

- A. All structural and miscellaneous aluminum shapes, bars and plates shall be Alloy 6061-T6. Aluminum to be placed adjacent to concrete, masonry or dissimilar metals shall be protected with one coat of bitumastic paint. Mill finish shall be provided.

## 2.05 FASTENERS

- A. General: Bolts, screws, nuts, washers, anchors and other fasteners shall be first quality and shall conform to the material specifications named herein. All necessary bolts, anchor bolts, nuts, washers, plates and bolt sleeves shall be furnished by the CONTRACTOR in accordance herewith. Anchor bolts shall have suitable washers and, where so required, their nuts shall be hexagonal. Stainless steel and silicon bronze bolts shall have a raised letter or symbol on the bolts indicating the manufacturer.
- B. Material: All bolts, anchor bolts, nuts, washers, plates, and bolt sleeves shall be Type 316 stainless steel, for all metal fabrications except structural steel, unless otherwise noted on the Drawings.
- C. If any bolts, anchor bolts, nuts and washers, are specified to be galvanized, they shall be zinc coated, after being threaded, by the hot dip process in conformity with ASTM A 123, or A 153, as is appropriate.
- D. Concrete Inserts: Concrete inserts shall be designed to support safely, in the concrete that is used, the maximum load that can be imposed by the bolts used in the inserts.
- E. Concrete and masonry inserts shall be drill-in type as manufactured by Phillips Drill Company, Michigan City, Indiana; Hilti, Tulsa, OK; or equal. Powder or gun-driven, fiber, and plastic inserts shall not be used unless specifically noted.
- F. Dissimilar Metal: All dissimilar metal shall be connected with appropriate fasteners and shall be insulated with a dielectric or equal. Unless otherwise specified, aluminum shall be fastened with ASTM A276 Type 316 stainless steel bolts and insulated with micarta, nylon, rubber, or equal.

## PROJECT 11887

- G. Anchor Bolts: Anchor Bolts shall be set accurately and be carefully held in suitable templates of a design acceptable to the CITY. Where indicated on the Drawings, specified, or required, Anchor Bolts shall be provided with square plates at least 4-inches by 1/8 inch or shall have square heads and washers and be set in the concrete forms with suitable pipe sleeves, or both. Drill-in type anchors shall be as shown on the Drawings.
- H. Concrete Anchors: Where Concrete Anchors are called for on the Drawings, one of the types listed below shall be used; except, where one of the types listed below is specifically called for on the Drawings, only that type shall be used. The determination of anchors equivalent to those listed below shall be on the basis of ultimate tensile and shear capacities from test data published by the manufacturer.
1. Shell-Type Anchors: Shell-Type Anchors shall be self-drilling or non-drilling Red Head anchors as manufactured by the Phillips Drill Company, or equal.
  2. Wedge Anchors: Wedge anchors shall be Red Head Wedge-Type Anchors as manufactured by the Phillips Drill Company, Parabolt Anchors as manufactured by the Molly Division of Emhart Corporation, or equal.
  3. Adhesive Anchors: Adhesive Anchors shall be capsule-type by "HILTI" or equal. Anchors which use a pour-in or injection system for the epoxy resin placement may be used provided that test data are submitted substantiating the equivalence of tensile and shear capacities to the Capsule-Type anchors specified herein.
- I. Unless otherwise noted, all Concrete Anchors which are submerged, or which are subject to vibration from equipment such as pumps and generators, shall be Adhesive Anchors.

PART 3 -- EXECUTION

## 3.01 FABRICATION

- A. General: All workmanship shall be first class and conform to recognized and accepted best practice. All structural materials shall be thoroughly straightened in the shop by methods that will not injure them before templates are placed on same for laying out and before any work is done upon them.
- B. Finished members shall be absolutely straight and free from open joints and distortions of any kind. All sheerings shall be neatly finished. Flame cutting may be used in the preparation of the various members provided this operation is performed by a machine. All necessary fillets, connections, brackets, posts, and other details not shown on the Drawings, but necessary for the work, shall be furnished by the CONTRACTOR.

## PROJECT 11887

Fabrication shall be by welding except where riveted construction is specifically allowed by the Contract Documents.

- C. Steel: Steel fabrication shall meet the applicable requirements of the AISC Specification for Design, Fabrication, and Erection of Structural Steel for Buildings.
- D. Except as otherwise shown, the fabrication and erection of structural steel shall conform to the requirements of the American Institute of Steel Construction "Manual of Steel Construction".
- E. Aluminum: Aluminum fabrication shall meet the applicable requirements of the Aluminum Construction Manual, Specifications for Aluminum Structures.
- F. Castings: Castings shall be tough, sound and free from blow holes, shrinkage cracks or other defects. Castings shall be smooth and clean. Units that have been plugged or filled will be rejected.
- G. Iron castings shall be close-grained gray iron or ductile iron.

## 3.02 EXAMINATION

- A. Verify that field conditions are acceptable and are ready to receive work.
- B. Beginning of installation means erector accepts existing conditions.

## 3.03 PREPARATION

- A. Clean and strip primed steel items to bare metals where site welding is required.
- B. Supply items required to be cast into concrete with setting templates, to appropriate sections.

## 3.04 INSTALLATION

- A. Install items plumb and level, accurately fitted, free from distortion or defects.
- B. Allow for erection loads, and for sufficient temporary bracing to maintain true alignment until completion of erection and installation of permanent attachments.
- C. Field Weld components indicated on Drawings.
- D. Installation must be acceptable to the CITY prior to site cutting or making adjustments not scheduled.

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## 3.05 WELDING

- A. Welding, where required, shall be performed in accordance with the requirements of the AWS - Structural Welding Code. All shop and field welds in structural steel shall be visually inspected by an AWS qualified welding inspector. The Contractor shall furnish a letter of certification for each welded connection stating that these requirements have been met.
- B. All Welding shall be by the metal-arc method or gas-shielded arc method as described in the American Welding Society's "Welding Handbook" as supplemented by other pertinent standards of the AWS. Qualification of Welders shall be in accordance with the AWS Standards governing same.
- C. In assembly and during Welding, the component parts shall be adequately clamped, supported and restrained to minimize distortion and for control of dimensions. Weld reinforcement shall be as specified by the AWS Code. Upon completion of Welding, all weld splatter, flux, slag, and burrs left by attachments shall be removed. Welds shall be repaired to produce a workmanlike appearance, with uniform weld contours and dimensions. All sharp corners of material, which is to be painted or coated shall be ground to a minimum of 1/32-inch on the flat.
- D. Welding of stainless steel to carbon steel is to be performed in accordance with the American Welding Society standards. The CONTRACTOR shall submit for review the welding rods intended to be used for this process.

-END OF SECTION-

## PROJECT 11887A

## SECTION 05515 - LADDERS

PART 1 -- GENERAL

## 1.01 REQUIREMENT

- A. The CONTRACTOR shall furnish all materials, labor, and equipment required to provide all ladders in accordance with the requirements of the Contract Documents. Five sets of ladders are to be provided in the following locations as indicated on the Drawings. All ladders shall be equipped with a fall prevention system.

## 1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Section 05010 – Metal Materials
- B. Section 05500 – Metal Fabrications

## 1.03 REFERENCE SPECIFICATIONS, CODES AND STANDARDS

- A. Without limiting the generality of the Specifications, all work specified herein shall conform to the applicable requirements of the following documents.
  - 1. Florida Building Code
  - 2. Occupational Safety and Health Administration (OSHA) Regulations

## 1.04 SUBMITTALS

- A. Submit the following in accordance with Section 01300 entitled "Submittals".
  - 1. Complete fabrication and erection drawings of all metalwork specified herein.
  - 2. Other submittals as required in accordance with Section 05500 "Metal Fabrications".

PART 2 -- PRODUCTS

## 2.01 METAL MATERIALS

- A. Metal materials, fasteners and welds used for ladders shall conform to Section 05500 "Metal Fabrications", unless noted otherwise.

## 2.02 LADDER REQUIREMENTS

- A. All ladders shall be fixed to the tank structure. A vertical rail shall be provided with all ladders per OSHA regulations for attachment of the safety harness.
- B. Ladders shall be furnished with all mounting brackets, baseplates, fasteners, and necessary appurtenances for a complete and rigid installation.

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Ladders

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- C. All ladders shall be steel or as shown on the Drawings.
- D. All ladders shall conform to nominal dimensions indicated on the Drawings and shall comply with OSHA requirements.
- E. Side rails shall be 1-1/2 inch diameter schedule 80 pipe, minimum.
- F. Rungs shall be OSHA approved, non-slip, solid serrated minimum 1-inch diameter.
- G. All exposed connections shall be welded and ground smooth.

2.03 LADDER SCHEDULE

- A. The CONTRACTOR shall furnish all materials, labor, and equipment required to provide all ladders in accordance with the requirements of the Contract Documents. Five sets of ladders are to be provided in the following locations as indicated on the Drawings.

**Ladder Schedule**

<b><u>Designation</u></b>	<b><u>Type</u></b>	<b><u>Features</u></b>
Tank Interior	Vertical	Vertical Rail, Up Safety Post
Riser Interior	Vertical	Vertical Rail, Up Safety Post
Riser Exterior	Vertical	Vertical Rail
Catwalk to Balcony	Curved	Cable Guide
Roof	Curved	Cable Guide

2.04 VERTICAL RAIL

- A. All vertical ladders shall be installed with vertical rails for fall protection safety. Vertical rails shall be as per OSHA regulations for attachment of the safety harness. Vertical rail shall be the same material as the ladder and shall be as manufactured by French Creek Production, Inc. CONTRACTOR shall supply removable trolley devices 2-1224A-AT as provided by French Creek Production, Inc.

2.05 CABLE GUIDE

- A. All guardrail on the dome of the tank and the curved ladders shall have cable guides attached to them. Cable guides shall be as per OSHA regulations for attachment of the safety harness. Guide shall be 3/8-inch galvanized cable as manufactured by Guardian Fall Protection or equal. CONTRACTOR shall supply cable grab for use with 3/8-inch cable guide.

## PROJECT 11887A

## 2.06 SECURITY COVER

- A. A security cover shall be provided as shown on the Drawings. Panel shall be six feet high and guard the first five rungs of the ladder. Cover shall be manufactured by National Ladder and Scaffold Company or equal.
- B. Cover shall be steel and contain heavy duty hinges and a locking clasp. Padlock and key will be provided by the CITY.

## 2.07 SAFETY HARNESES AND FALL PROTECTION

- A. Safety harnesses shall be Miller Fall Protection Revolution Construction Harness or equal. Harness shall be able to withstand a maximum working load of 400 lb and a minimum webbing tension of 7,000 lb. Harness shall include back and shoulder pads complying with OSHA 1926.502 and 810.32. CONTRACTOR shall provide 6 harnesses.
- B. Fall protection shall be a vertical rail system. One additional set of hardware shall be provided for each ladder and handrail system.

## 2.08 UP SAFETY POST

- A. Up safety posts shall be provided with Bilco Model 2 Ladder Up Safety Posts, or equal. The safety post system components shall be suitable for service in a corrosive environment. The safety posts shall be manufactured of high strength, hot dip galvanized steel with telescoping tubular sections that lock automatically when fully extended. Upward and downward movement shall be controlled by a steel spring balancing mechanism. The safety posts shall be completely assembled with fasteners for securing to the ladder rungs in accordance with the manufacturer's recommendations.

PART 3 -- EXECUTION

## 3.01 FABRICATION

- A. All measurements and dimensions shall be based on field conditions and shall be verified by the CONTRACTOR prior to fabrication. Such verification shall include coordination with adjoining work.
- B. All fabricated work shall be shop fitted together as much as practicable, and delivered to the field, complete and ready for erection.
- C. All work shall be fabricated and installed in a manner that will provide for expansion and contraction, prevent shearing of bolts, screws, and other fastenings, ensure rigidity, and provide a close fit of sections.
- D. Finished members shall conform to the lines, angles, and curves shown on the Drawings and shall be free from distortions of any kind.
- E. All shearings shall be neat and accurate, with parts exposed to view neatly finished. Flame cutting is allowed only when performed utilizing a machine.

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- F. All shop connections shall be welded unless otherwise indicated on the Drawings or specified herein. All fastenings shall be concealed where practicable.
- G. Fabricated items shall be shop painted when specified in accordance with Section 09900 entitled "Painting".

## 3.02 INSTALLATION

- A. Assembly and installation of fabricated system components shall be performed in strict accordance with manufacturer's recommendations.
- B. All ladders shall be erected square, plumb and true, accurately fitted, adequately anchored in place, and set at proper elevations and positions.
- C. Metalwork shall be field painted when specified in accordance with Section 09900 entitled "Painting".

## 3.03 TRAINING

- A. The CONTRACTOR shall arrange to have the fall prevention system manufacturer provide training on the fall prevention system.

- END OF SECTION -

**DIVISION 9**

**FINISHES**



## PROJECT 11887

## SECTION 09805 – REMOVAL OF LEAD-CONTAINING PAINT

PART 1 -- GENERAL

## 1.01 SCOPE

- A. This Section covers the removal and disposal of paint from steel water storage tank coated with lead-containing paint. The objective is to create a work area that is safe for workers and occupants during the removal of lead-containing paint items, and to properly dispose of lead-containing paint items, while complying with all applicable Federal, State and local regulations governing the removal and disposal of lead-containing paint items.
- B. This Section specifies the repair of the lead-containing paint from the water storage tank and consists of furnishing all labor, equipment and materials, and performing all operations necessary for the removal, containment, cleanup and disposal of all lead-containing paint debris. CONTRACTOR shall obtain any required permits and payment of any fees in connection with the Project. CONTRACTOR shall perform his own quality control, administer and supervise his work force as specified herein.
- C. Laboratory test results from samples from the exterior of the tank indicate that the paint contains 0.11 percent lead and 0.0033 percent chromium by weight.
- D. CONTRACTOR shall comply with all laws, ordinances, rules, and regulations of Federal, State and local authorities regarding worker protection during removal, handling, storing, transporting, and disposing of lead-containing waste materials. CONTRACTOR shall submit matters requiring interpretation of standards to the appropriate administrative agency for resolution before starting removal work.
- E. This Specification also applies to the containment facilities required for painting the water storage tank.

## 1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Section 01540 – Demolition and Removal of Existing Structures and Equipment
- B. Section 09900 – Painting

## 1.03 REFERENCE SPECIFICATIONS, CODES AND STANDARDS

- A. The publications listed below form a part of these Specifications to the extent referenced. The publications are referred to in the text by basic designation only. The list is not inclusive of all standards applicable to the project.
- B. Code of Federal Regulations Publications:
  - 29 CFR 1910 - Occupational Safety and Health Standards
  - 29 CFR 1926 - Safety and Health Regulations for Construction
  - 40 CFR 117 - Determination of Reportable Quantities for Hazardous Substances
  - 40 CFR 241 - Guidelines for the Land Disposal of Solid Wastes

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- 40 CFR 261 - Identification and Listing of Hazardous Waste
- 40 CFR 262 - Standards Applicable to Generators of Hazardous Waste
- 40 CFR 263 - Standards Applicable to Transporters of Hazardous Waste
- 40 CFR 268 - Land Disposal Restrictions
- 40 CFR 302 - Designation, Reportable Quantities, and Notification

C. Occupational Safety and Health Administration Publication:

- PUB 3126 - Working with Lead in the Construction Industry

D. National Institute of Occupational Safety and Health Publication:

- Method 7082 - Lead

E. American Society of Testing and Materials Publications:

- ASTM D 3335 - Test Method for Low Concentrations of Lead, Cadmium and Cobalt in Paint by Atomic Absorption Spectroscopy

F. Environmental Protection Agency Publications:

- SW-846 - Test Methods for Evaluating Solid Waste – Physical/Chemical Methods
- Method 3050 - Acid Digestion of Sediments, Sludges and Soils

G. Society For Protective Coatings Publications:

- Guide 6I (CON) - Guide for Continuing Debris Generated During Plant Removal Operations
- Guide 7I (DIS) - Guide for the Disposal of Lead-Contaminated Surface Preparation Debris

## 1.03 DEFINITIONS

- A. Action Level: Employee exposure, without regard to use of respirators, to an airborne concentration of lead of 30 micrograms per cubic meter of air averaged over an 8-hour period in an occupational or industrial environment.
- B. Competent Person (CP): As used in this section, refers to a person employed by the Contractor who is trained in the recognition and control of lead hazards in accordance with current federal, State, and local regulations.
- C. Eight-Hour Time Weighted Average (TWA): Airborne concentration of lead to which an employee is exposed, averaged over an 8-hour workday indicated in 29 CFR 1926.62
- D. Lead Containing Paint (LCP): Lead-based paint or other similar surfaces or coatings containing lead or lead compound which contain in excess of 0.06% lead by weight and are applicable to OSHA standard 29 CFR 1926.62. Any condition that causes exposure to lead from lead-contaminated dust, lead-contaminated soil, lead-based paint that is deteriorated or present in accessible surfaces, friction surfaces, or impact surfaces that would result in adverse human health effects.

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- E. Lead Control Area: A demarcated, enclosed area or structure constructed as a temporary containment equipped with HEPA filtered local exhaust, which prevents the spread of lead dust, paint chips, or debris existing as a condition of lead-based paint removal operations. The lead control area is also isolated by physical boundaries to prevent unauthorized entry of personnel.
- F. Lead Permissible Exposure Limit (PEL): Fifty micrograms per cubic meter of air as an 8-hour time weighted average as determined by 29 CFR 1926.62. If an employee is exposed for more than eight hours in a workday, the PEL shall be determined by the following formula:

$$\text{PEL (micrograms/cubic meter of air)} = 400 / \text{no. hours worked per day}$$

- G. Personal Sampling: Sampling of airborne lead concentrations within the breathing zone of an employee to determine the 8-hour time weighted average concentration in accordance with 29 CFR 1926.62. Samples shall be representative of the employees' work tasks. Breathing zone shall be considered an area within a hemisphere, forward of the shoulders, with a radius of 6 to 9 inches and centered at the nose or mouth of an employee.
- H. Physical Boundary: Area physically roped or partitioned off around an enclosed lead control area to limit unauthorized entry personnel. As used in this section "inside boundary" shall mean the same as "outside lead control area but inside boundary".

## 1.04 SUBMITTALS

- A. The following items identified in this Article shall be submitted in accordance with Section 01300 entitled "Submittals".
- B. Work Plan: CONTRACTOR shall submit a detailed LCP removal work plan of the work procedures to be used in the containment, ventilation, decontamination, removal and disposal of LCP within seven days of the date of the Notice to Proceed and prior to the start of any removal work. The LCP removal work plan shall meet the applicable requirements of 29 CFR 1926. Prior to beginning work, CONTRACTOR shall meet CITY to discuss in detail the removal work plan, including removal, containment, ventilation, daily work procedures, worker protection, safety precautions and disposal of waste.
- C. Containment Plan: CONTRACTOR shall submit a detailed Containment Plan sealed by a Professional Engineer, registered in the State of Florida.
- D. Ventilation Plan: CONTRACTOR shall submit a detailed Ventilation Plan signed and sealed by a Professional Engineer, registered in the State of Florida.
- E. Manufacturer's Catalog Plan: CONTRACTOR shall submit manufacturer's data on:
1. Respirators, filters and protective clothing.
  2. Containment materials.
  3. Ventilation materials and equipment.

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4. Other materials and equipment identified in plans submitted by CONTRACTOR.
- F. Test Reports: Lead dust sampling shall be completed by CONTRACTOR and results reviewed by CONTRACTOR within 24 hours of the time taken. CONTRACTOR shall notify CITY immediately of any exposures to workers, or others to lead dust in excess of the OSHA acceptable limits. CONTRACTOR shall submit air monitoring results to CITY within three working days of the samples taken, signed by the testing laboratory employee(s) performing air monitoring, and the worker who took the sample, and CONTRACTOR's outside foreman.
- G. CONTRACTOR shall submit copies of all test results to CITY.
- H. CONTRACTOR shall submit the following records to CITY:
1. Testing Laboratory: The laboratory selected by CONTRACTOR, if used to analyze air and surface samples for LCP shall meet the requirements of OSHA for Quality Control Procedures. A copy of current results of the quality assurance programs shall be submitted to CITY.
  2. Permits: A copy of all Federal, State and local licenses and permits shall be submitted for the LCP removal firm, the supervising foreman, if such licensing is required. CONTRACTOR shall obtain necessary permits in conjunction with the LCP removal work.
  3. Reports: Daily filed reports.
  4. Logs: Daily worker and visitor logs.
  5. Landfill: Written evidence that the designated disposal landfill meets the requirements of 40 CFR 241 and is approved for LCP debris disposal by the EPA, State and local regulatory agencies. Submit detailed delivery tickets, prepared, signed, and dated by an agent of the landfill, certifying the amount of and concentration of leaded materials delivered to the landfill, within three working days after delivery.
  6. Hazardous Waste Management Plan: The Hazardous Waste Management Plan.
  7. Hazardous Waste Manifest: The Hazardous Waste Manifest.
  8. Notifications: CONTRACTOR shall notify the EPA and CITY in writing ten working days prior to the start of LCP removal work.

## 1.05 SAFETY AND HEALTH COMPLIANCE

- A. General: CONTRACTOR shall further comply with all laws, ordinances, rules, and regulations of Federal, State and local authorities regarding handling, storing, transporting, and disposing of lead-containing waste materials. CONTRACTOR shall submit matters requiring interpretation of standards to the appropriate administrative agency for resolution before starting removal work.

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- B. Medical Surveillance: Provide medical surveillance to all personnel exposed to lead as indicated in 29 CFR 1926.62.
- C. Training: Train each employee performing paint removal, disposal, and air sampling operations prior to the time of initial job assignment and annually thereafter, in accordance with 29 CFR 1926.21, and 29 CFR 1926.62.
- D. Training Certification: Submit a certificate for each employee, signed and dated by the training source, stating that the employee has received the required lead training per 29 CFR 1926.62
- E. Respiratory Protection Program: Furnish each employee required to wear a negative pressure respirator or other appropriate type with a respirator fit test at the time of initial fitting and at least annually thereafter as required by 29 CFR 1926.62. Establish and implement a respiratory protection program as required 29 CFR 1910.134 and 29 CFR 1926.62. Establish and implement a Hazard Communication Program as required by 29 CFR 1926.59.

## 1.06 HAZARDOUS WASTE MANAGEMENT

- A. The Hazardous Waste Management Plan shall comply with applicable requirements of federal, State, and local hazardous waste regulations and address:
  1. Identification and classification of hazardous wastes associated with the work.
  2. Estimated quantities of wastes to be generated and disposed.
  3. Names and qualifications of each contractor that will be transporting, storing, treating, and disposing of the wastes. Include the facility location and operator and a 24-hour point of contact.
  4. Names and qualifications (experience and training) of personnel who will be working on-site with hazardous wastes.
  5. List of waste handling equipment to be used in performing the work, to include cleaning, volume reduction, and transport equipment.
  6. Spill prevention, containment, and cleanup contingency measures including a health and safety plan to be implemented in accordance with 29 CFR 1926.65.
  7. Work plan and schedule for waste containment, removal and disposal. Wastes shall be cleaned up and containerized daily.
  8. Include any process that may alter or treat waste rendering a hazardous waste nonhazardous.

## 1.07 COMPETENT PERSON RESPONSIBILITIES

- A. The following are the responsibilities of the CP:
  1. Certify training as meeting all federal, State, and local requirements.

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2. Review and approve LCP removal and disposal plan for conformance to applicable referenced standards.
3. Inspect LCP removal work for conformance with the approved plan.
4. Responsible for personnel air sampling.
5. Ensure work is performed in strict accordance with specifications at all times.
6. Control work to prevent exposure to occupants and to the environment at all times.
7. Certify the conditions of the work as called for elsewhere in this specification.

## 1.08 POLLUTION

- A. The generation of lead containing dust or LCP debris outside of the Lead Control Area is prohibited.

PART 2 – PRODUCTS

## 2.01 BLASTING ABRASIVE MATERIALS

- A. General: CONTRACTOR shall use mineral, slag or synthetic type abrasives for blast cleaning of paint. Silica sand shall not be used as an abrasive for blast cleaning. The blasting abrasive shall be of the type and size to establish an angular anchor profile within the guidelines of the Coating Manufacturer's product data sheets
- B. Blasting Abrasive Additive: CONTRACTOR shall a blasting abrasive additive such as Blastox, or equal, to the abrasives to condition the waste so that it is considered nonhazardous by EPA standards. The blasting abrasive additive shall be designed to disintegrate into small particles when it hits the surface being sandblasted to provide maximum coverage of the additive to the paint particles.

## 2.02 EQUIPMENT

- A. Respirators: Furnish appropriate respirators approved by the National Institute for Occupational Safety and Health (NIOSH), Department of Health and Human Services, for use in atmospheres containing lead dust. Respirators shall comply with the requirements of 29 CFR 1926.62.
- B. Special Protective Clothing: Furnish personnel who will be exposed to lead-contaminated dust with proper disposable (uncontaminated, reusable) protective whole body, head covering, gloves, and foot coverings as required by 29 CFR 1926.62. Furnish proper disposable plastic or rubber gloves to protect hands. Reduce the level of protection only after obtaining approval from the CP.
- C. Furnish the CITY with two complete sets of personal protective equipment (PPE) daily, as required herein, for entry into and inspection of the lead removal work within the lead controlled area. Personal protective equipment shall include disposable whole body covering, including appropriate foot, head, eye, and hand protection. PPE shall remain

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the property of the CONTRACTOR. Any Type "C" respiratory protection necessary for the safe entry into the controlled area for the Site Representative will be provided by the CONTRACTOR while any air purifying respiratory protection used by CITY.

### PART 3 – EXECUTION

#### 3.01 CONTAINMENT

- A. General: CONTRACTOR shall erect a temporary structure around the tank to contain debris from blast cleaning operations including airborne particulate matter. Containment shall be maintained during painting operation.
- B. All aircraft obstruction lighting on the tank shall be kept energized and in continuous operation by CONTRACTOR during the blasting and painting operations.
- C. CONTRACTOR shall test solid waste for hazardous material content. All wastes shall be considered hazardous until sufficient testing indicates that it is nonhazardous. CONTRACTOR shall take all necessary actions to protect his workers from working with and handling wastes that are considered to be hazardous.
- D. The containment system shall meet the requirements of Class 2 as specified in the SSPC Guide 6 "Guide for Containing Debris Generated During Paint Removal Operations." Assessment of the containment system will be conducted in accordance with SSPC Guide 6 Section 5.5. CONTRACTOR is responsible for the testing. All workers shall be protected in accordance with the applicable OSHA standards.
- E. Loads: The containment system shall be designed and erected so that no damaging loads are imposed by the containment and collection systems on the elevated tank.
- F. Boundary Requirements: Provide physical boundaries around the lead control area and staging area by barricade tape and work compound.
- G. Warning Signs: Provide caution signs at boundary and warning signs at approaches to lead control areas. Locate signs at such a distance that personnel may read the sign and take the necessary precautions before entering the area. Signs shall comply with the requirements of 29 CFR 1926.62.

#### 3.02 MONITORING

- A. CONTRACTOR shall perform personnel air monitoring during the ongoing paint removal activity to determine the level of airborne lead and the adequacy of the respiratory protection required. Each active worker shall be monitored. The highest reading of any worker shall serve as the basis of respirator protection. CONTRACTOR shall provide CITY with test results within three consecutive days after completion of the weekly testing. Federal, State or local regulations regarding occupational exposure monitoring shall be followed if more stringent than the monitoring required herein. Monitoring shall be determined by CONTRACTOR to be in compliance with federal regulations.
- B. CONTRACTOR shall install air monitors to continuously monitor airborne particulate matter for lead. The monitors shall be placed into operation prior to the erection of the

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containment facilities and remain in service until after the removal of the containment facilities. The number and location of monitors shall be determined by CONTRACTOR to be in compliance with local, state and federal regulations based on his operations.

## 3.03 SOIL SAMPLING

- A. Soil sampling prior to the start of the Work on the site. CONTRACTOR shall test seven sample areas (three locations under the tank and four locations located to the north, south, east, and west of the tank), all as designated by the CITY in the field. Locations of the soil samples shall be staked and surveyed by CONTRACTOR. Sample locations shall be marked with a surveyor stake or pin in order to locate the sample points after the completion of the Work.
- B. After completion of the work, the CONTRACTOR shall test the same seven sample areas as described in above. CONTRACTOR shall collect samples according to the HUD protocol contained in HUD Guidelines to determine the lead content of settled dust in parts per million (ppm) or micrograms per gram (mg/g) for soil. Comparing these soil samples with the ones taken prior to the start of the work will determine if soil lead levels increased at a statistically significant level (significant at the 95 percent confidence limit) from the soil lead levels prior to the lead removal operation. If soil lead levels either show a statistically significant increase above soil lead levels prior to lead removal operations or soil lead levels are above any applicable federal or state standard for lead in soil, the soil shall be remediated by the CONTRACTOR at no cost to the CITY.

## 3.04 BLASTING ABRASIVE ADDITIVE

- A. CONTRACTOR shall store and blend blasting abrasive additive in accordance with the manufacturer's written instructions.

## 3.05 DISPOSAL OF WASTE

- A. Requirements: Blasting media/waste and residue shall be cleaned from the work area prior to coating activities. CONTRACTOR shall dispose of LCP debris in accordance with applicable Federal, State, and local requirements. CONTRACTOR shall submit written disposal plans to CITY for review not less than seven days prior to bringing any disposal operations involving LCPs. CONTRACTOR shall complete and furnish to CITY a complete written report of all disposal activities, whether hazardous or nonhazardous, within three days after completion of the particular disposal activity or operation.
- B. CONTRACTOR shall refer to SSPC Guide 7 "Guide for Disposal of Lead Contaminated Surface Preparation Debris" for disposal.
- C. Wastes from different removal methods and from dust collecting equipment shall be kept separate by CONTRACTOR and stored and handled as hazardous waste. All wastes shall be assumed to contain lead and CONTRACTOR shall take all necessary actions to protect his workers from this hazard. All wastes shall be considered hazardous until sufficient testing indicates that it is nonhazardous.
- D. Testing for Hazardous Waste: CONTRACTOR shall determine if any of the wastes are hazardous based on the test results for leachable lead by Total Characteristic Leaching Procedures (TCLP) or, based on previous TCLP test results, declare a waste to be

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hazardous. CONTRACTOR shall take random samples of waste material prior to cleanup for testing purposes. When the results of this testing indicate a concentration of leachable lead to be greater than five parts per million the waste shall be considered hazardous, requiring special disposal.

- E. Waste generated may contain lead although the amount of leachable lead shall be below five ppm to consider it a nonhazardous waste.
- F. Nonhazardous Waste Disposal: All nonhazardous waste shall be transported to a Class 1 Sanitary Landfill where they shall be disposed. CONTRACTOR shall submit a tracking document indicating where and when the waste was disposed. The transporter and the disposal facility shall sign the document.
- G. Hazardous Waste: If any of the wastes are determined to be hazardous wastes, then CONTRACTOR shall obtain an EPA identification number and dispose of the waste in accordance with the following:
1. CONTRACTOR shall complete EPA Form 8700-12 and transmit it to the EPA Region Office where a permanent identification number will be assigned – usually within three to six weeks.
  2. All hazardous waste shall be collected and stored in proper DOT approved containers. The waste containers shall meet all DOT requirements for packaging and labeling before transport. The containers must be labeled “Hazardous Waste” and once full, dates of accumulations must be placed on them. Once dated, the waste can be stored on site for a maximum of ninety days before shipment is required. When not in use, all containers must be secured. “Danger: Unauthorized Personnel Keep Out” signs shall be placed around the waste storage area and shall be visible from all directions of approach.
  3. Lead-containing waste shall be transported and disposed of in a manner to prevent lead from becoming airborne.
  4. An EPA Manifest form shall be obtained prior to transporting the waste. CONTRACTOR shall keep the original copy of the Manifest for at least three years after the issuance of Substantial Completion by CITY. Copies shall be submitted to CITY.

- END OF SECTION -

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## SECTION 09900 - PAINTING

PART 1 -- GENERAL

## 1.01 SCOPE

- A. CONTRACTOR shall furnish all labor, tools, materials, supervision and equipment necessary to do all the work specified herein and as required for a complete installation, including surface preparation, priming and painting of existing and CONTRACTOR furnished equipment, materials and structures.
- B. Use coating systems specified in this section to coat all water tank components, unless otherwise indicated. Without restricting volume or generality, work to be performed under this section includes, but is not limited to:
  - 1. Exterior steel.
  - 2. Interior steel.
  - 3. All miscellaneous items including rods, ladders, conduit, piping, hangers, and supports.
- C. CONTRACTOR shall field measure all quantities. CITY and ENGINEER are not responsible for ensuring accuracy of the dimensions shown on the Drawings.
- D. Temporary containment is required for the removal and application of exterior coatings.
- E. Structural and mechanical repairs shall be made prior to coating application.

## 1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Additional information about the paint removal operations and the construction of temporary enclosures to contain airborne debris and paint is specified in Section 09805.
- B. Additional information about the Finish Coat of paint identified in Article 3.08 Paragraph B "Metal Surfaces, Exterior (Atmospheric) Exposure" is specified in "Volume D Specification" as prepared by Art, Light, Space.

## 1.03 QUALIFICATIONS

- A. CONTRACTOR shall have a minimum of five years experience in painting elevated steel water storage tanks.
- B. CONTRACTOR shall submit with his Bid a list of water tank work they have completed in the last five years and or related work. Included shall be names, addresses, contacts and phone numbers. Identify on these projects whether the Bidder was acting as the prime contractor or a subcontractor. Also submit the volume and height of the tanks, indicate new or existing tanks, lead containing paint removal or not, painting and

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rehabilitation or primarily just painting, the role of the Bidder in the identified projects and the dollar value of the projects

- C. CONTRACTOR shall submit a copy of this certification QA/QC plan or program.

#### 1.04 GENERAL INFORMATION AND DESCRIPTION

- A. All paint shall be especially adapted for use around water storage tanks and shall be applied in conformance with the manufacturer's published specifications.
- B. The terms "coating" and "paint", as used interchangeably herein, includes alkyds, acrylics, emulsions, enamels, epoxies, paints, polyurethanes, flourourethanes, zinc rich primers and other products, whether used as prime, intermediate, or finish coats.
- C. Dry Film Thickness (DFT) refers to paint thickness, measured in mils (1/1000 inch), of a coat of paint in its cured state.
- D. The complete water storage tank and appurtenances, shall be completely cleaned of existing paint and shall be painted with not less than a three coat system, plus a stripe coat, of the appropriate paint. Items to be painted include, but are not limited to exterior and interior steel, structural steel, miscellaneous metals, pipe, fittings, valves, conduit, and all other work which is obviously required to be painted unless otherwise specified.
- E. CONTRACTOR shall obtain all permits, licenses and inspections and shall comply with all laws, codes, ordinances, rules and regulations promulgated by authorities having jurisdiction which may bear on the work. This compliance will include Federal Public Law 91-596 more commonly known as the "Occupational Safety and Health Act of 1970".
- F. CONTRACTOR shall be responsible for any damage to any surrounding structures such as buildings, cars, landscaping, sidewalks, fences, etc. as a result of paint splatter, blast abrasive, mechanical damage, etc. All damage shall be repaired and restored to the original condition.

#### 1.05 REFERENCES

- A. Standards, Specifications, Recommended Practices, and listed herein are part of this Section to extent referenced
1. American Society for Testing and Materials:
    - a. ASTM D 16 Terminology Relating to Paint, Varnish, Lacquer, and Related Products
    - b. ASTM D 523 Test Method for Specular Gloss
    - c. ASTM D 610 Standard Practice For Evaluating Degree of Rusting on Painted Steel Surfaces

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- d. ASTM D 2244 Test Method for Calculation of Color Differences from Instrumentally Measured Color Coordinates
  - d. ASTM D 3359 Test Method for Measuring Adhesion by Tape Test
  - f. ASTM D 4414 Standard Practice for Measurement of Wet Film Thickness by Notch Gages
  - g. ASTM D 4541 Test Method for Pull Off Strength of Coatings Using Portable Adhesion-Testers
  - h. ASTM D 1005 Test for determining dry film thickness
  - i. ASTM D 4285 Standard Test Method for Indicating Oil or Water in Compressed Air
  - i. ASTM D 4417 Test for determining surface profile
  - j. ASTM D 6677 Standard Test Method for Evaluating Adhesion by Knife
2. The Society for Protective Coatings:
- a. SSPC-SP-1 Specification for Solvent Cleaning
  - b. SSPC-SP-2 Specification for Hand Tool Cleaning
  - c. SSPC-SP-3 Specification for Power Tool Cleaning
  - d. SSPC-SP-5 Specification for White Metal Blast Cleaning
  - e. SSPC-SP-6 Specification for Commercial Blast Cleaning
  - f. SSPC-SP-7 Specification for Brush-Off Blast Cleaning
  - g. SSPC-SP-10 Specification for Near White Metal Blast Cleaning
  - h. SSPC-SP-11 Specification for Power Tool Cleaning to Bare Metal
  - i. SSPC-SP-12 Specification for Water Jetting
  - j. SSPC-SP-13 Surface Preparation of Concrete
  - k. SSPC-SP-14 Industrial Blast Cleaning
  - l. SSPC-SP-15 Power Tool Cleaning to Commercial Metal
  - m. SSPC-PA-1 Painting Application Specification
  - n. SSPC-PA-2 Measurement of Dry Paint Thickness with Magnetic Gages

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- o. SSPC-QP-1 Certification of Field Application to Complex Industrial and Marine Structures.
- p. SSPC-QP-2 Certification of Field Removal of Hazardous Coatings.
- q. SSPC-TU-11 Inspection of Fluorescent Coating Systems
- r. SSPC-VIS-1 Visual Standard for Abrasive Blast Cleaned Steel
- s. SSPC-VIS-2 Standard Method for Evaluating Degree of Rusting on Painted Steel Surfaces

## 1.06 MANUFACTURERS

- B. All painting materials shall be as manufactured by Carboline, Sherwin Williams, Tnemec, International Paint, or equal.

## 1.07 SUBMITTALS

- A. CONTRACTOR shall prepare a complete schedule of surfaces to be coated and shall identify the surface preparation and paint system he proposes to use. The coating schedule shall be in conformance with Article 3.07. The schedule shall contain the name of the paint manufacturer, and the name, address and telephone number of the manufacturer's representative that will inspect the work. The schedule shall be submitted to CITY for review as soon as possible following the Notice to Proceed so that the schedule may be used to identify colors and to specify shop painting systems on order for fabricated equipment.
- B. CONTRACTOR shall submit a sample copy of the warranty to be issued after completion of the work.
- C. CONTRACTOR shall submit paint manufacturer's data sheets and samples of each finish and color to CITY for review, before any work is started in accordance with the section entitled "Submittals". Manufacturer's data sheets shall include descriptive data, curing times, mixing, thinning, application requirements and installation procedures, which will be used in the evaluation for accepting or rejecting intended installation procedures.
- D. The manufacturers' published instructions for use as a guide in specifying and applying the manufacturers' proposed paint shall be submitted to CITY. The instructions must have been written and published by the manufacturer for the purpose and with the intent of giving complete instruction for the use and application of the proposed paint in the locality and for the conditions for which the paint is specified or shown to be applied under this Contract.
- E. All limitations, precautions, and requirements that may adversely affect the paint; that may cause unsatisfactory results after the painting application; or that may cause the paint not to serve the purpose for which it was intended, that is, to protect the covered material from corrosion, shall be clearly and completely stated in the instructions. These limitations and requirements shall, if they exist, include, but not be limited to the following list:

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1. Storage Requirements
  2. Methods of application
  3. Number of coats
  4. Thickness of each coat
  5. Total thickness
  6. Drying time of each coat, including primer
  7. Primer required to be used
  8. Primers not permitted
  9. Use of a primer
  10. Thinner and use of thinner
  11. Temperature and relative humidity limitations during application and after application
  12. Time allowed between coats
  13. Protection from sun
  14. Physical properties of paint including solids content and ingredient analysis
  15. Surface preparation
  16. Touch up requirements and limitations
- F. Submitted samples of each finish and color shall be prepared so that areas of each sample indicate the appearance of the various coats. For example, where a three coat system is specified, the sample shall be divided into three areas indicating one coat only, two coats and all three coats. CITY will provide written authorization constituting a standard, as to color and finish only, for each coating system.
- G. Submit manufacturer's certification that products to be used comply with specified requirements and are merchantable and suitable for intended application.
- H. Submit listing of not less than five of applicator's most recent applications representing similar scope and complexity to the project requirements. List shall include information as follows:
1. Project name and address
  2. Name of owner
  3. Name of contractor

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4. Name of engineer

5. Date of completion

- I. CONTRACTOR shall provide the name and chemical composition, product data sheets, and MSDS sheets of cleaners that will be used for preparing the existing coating or for the removal of mildew.
- J. CONTRACTOR shall submit finish paint color samples of all external colors (tank and logo) on 4 x 4-inch (minimum) metal plates for review.

#### 1.08 SERVICES OF MANUFACTURERS REPRESENTATIVE

- A. CONTRACTOR shall purchase paint from an acceptable manufacturer. The manufacturer shall assign a representative to inspect the application of his product both in the shop and field. Prior to and after coating application, the manufacturer's representative shall submit reports to CITY identifying the products used and verifying that said products were proper for the exposure and service intended and were properly applied, respectively.
- B. Services shall also include, but not be limited to, inspecting prior coatings of paint, determination of best means of surface preparation, inspection of completed work, and final inspection of painted work to be performed eleven months after the job is completed.

#### 1.09 WARRANTY

- A. General: All work covered in these specifications shall be guaranteed for a period of one year. CONTRACTOR shall provide materials and labor necessary to repair any system failures during the warranty period.
- C. After Substantial Completion of the project, CITY will perform an inspection at one year (during the twelfth month following Substantial Completion). CITY will notify CONTRACTOR when this inspection is scheduled. The CONTRACTOR shall provide a representative to attend the inspection and provide the necessary safety equipment to perform the inspection.
- D. CONTRACTOR shall extend the terms of this warranty to cover repaired parts and all replacement parts furnished under the warranty provisions for a period of one year from the date of their installation.
- E. If within ten days after CITY gives CONTRACTOR notice of a defect, failure, or abnormality of the work, CONTRACTOR neglects to make, or undertake with due diligence to make, the necessary repairs or adjustments, CITY is hereby authorized to make the repairs or adjustments or order the work to be done by a third party. The cost of the work shall be paid by CONTRACTOR.
- F. Exposure to sunlight and normal atmospheric conditions characteristic of the Fort Lauderdale, Florida area shall not void the provisions of this warranty.

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- G. Additional Material Warranty: The Coating Manufacturer shall provide a material performance warranty covering materials and labor for a period not less than seven years (six years beyond the end of CONTRACTOR's one year warranty). This warranty shall cover failures due to cracks, chipping, flaking, peeling, or corrosion in cumulative areas in excess of 3% of the total coating system area per ASTM D 610 and SSPC-Vis-2.
- H. CITY intends to perform additional inspections at four years and 6-3/4 years. CITY will notify the Coatings Manufacturer when these inspections are scheduled. The Coatings Manufacturer shall provide a representative to attend each inspection and agrees that the inspections are sufficient to keep the warranty in place.

## 1.10 QUALITY ASSURANCE

- A. Applicator shall be trained in application techniques and procedures of coating materials and shall demonstrate a minimum of five years successful experience in such application. Applicator shall maintain, throughout duration of application, a crew of painters who are fully qualified.
- B. Single source responsibility shall be provided. Materials shall be products of a single manufacturer. Other, additional materials, which are produced or are specifically recommended by coating system manufacturer to ensure compatibility of system, may be used
- C. CONTRACTOR shall give CITY a minimum of three days advance notice of the start of any field surface preparation work of coating application work.
- D. All such work shall be performed only in the presence of ENGINEER, unless ENGINEER has specifically allowed the performance of such work in his absence.
- E. Inspection by ENGINEER, or the waiver of inspection of any particular portion of the work, shall not relieve CONTRACTOR of his responsibility to perform the work in accordance with these Specifications.
- F. Where protective coatings are to be performed by a subcontractor, said subcontractor must provide five references which show that the painting subcontractor has previous successful experience with the specified or comparable coating systems. Include the name, address, and the telephone number for the owner of each installation for which the painting subcontractor provided the protective coating.
- G. The finish coat used shall be the same color and gloss throughout the duration of the Project.
- H. Environmental Requirements: Apply coating materials per manufacturer's printed data sheet instructions:
1. Refer to specific product data sheets for minimum surface temperature requirements. Surface temperatures shall be at least 5 degrees F (15 degrees C) above dew point and rising.

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2. Provide for proper ventilation and/or dehumidification using explosion proof equipment and allow operation during application and cure cycle of the coating systems as recommended by manufacturer.
3. Provide adequate illumination using explosion proof lights and equipment.
4. Provide work site free of airborne dust, debris, and other contaminants.

## 1.11 QUALITY WORKMANSHIP

- A. CONTRACTOR shall be responsible for the cleanliness of his painting operations and shall use covers and masking tape to protect the work whenever such covering is necessary, or if so requested by CITY. Any unwanted paint shall be carefully removed without damage to any finished paint or surface. If damage does occur, the entire surface, adjacent to and including the damaged area, shall be repainted without visible lapmarks and without additional cost to CITY.
- B. CONTRACTOR shall be responsible for any dust, debris and/or paint droplets which leave the City's property and/or cause damage to neighboring property. Insufficient containment of abrasive debris and/or generation of nuisance dust beyond the City property limits is just cause for shut-down of the job until proper protective measures are in place and violations have been remedied.

## 1.12 SAFETY AND HEALTH REQUIREMENTS

- A. CONTRACTOR is responsible for the safety of the work and the job site. CONTRACTOR shall provide and position all safety equipment, rigging, lighting, scaffolding, labor and calibrated instruments.
- B. In accordance with requirements of OSHA Safety and Health Regulations for General Industry (29 CFR 1910) and for Construction (29 CFR 1926), and the applicable requirements of regulatory agencies having jurisdiction, as well as manufacturer's printed instructions, appropriate technical bulletins, manuals, and material safety data sheets, CONTRACTOR shall provide and require use of personnel protective and safety equipment for persons working in or about the project site.
- C. Adequate ventilation shall be provided and maintained during surface preparation, coating mixing, coating application, and curing phases of work to adequately remove dust and fumes to prevent injury to workmen or accumulation of volatile gases. Respirators shall be worn by persons engaged or assisting in spray painting. CONTRACTOR shall provide ventilating equipment and all necessary safety equipment for the protection of the workmen and the work.
- D. CONTRACTOR shall provide and maintain safe, secure rigging and scaffolding in compliance with the OSHA scaffold standards 29 CFR 1926.450-454. CONTRACTOR is responsible for all attachments to or imposing loads on the structures. Any attachments to the structure are prohibited unless acceptable to CITY in advance. If CITY allows attachments, they shall be responsibility of CONTRACTOR.
- E. Fall protection or prevention shall be provided in accordance with 29 CFR 1926.104, 29 CFR 1926.105, and 29 CFR 1926.500-503.

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- F. All paint shall comply with all requirements of the Air Pollution Regulatory Acts concerning the application and formulation of paints and coatings for an area in which the paints are applied. Specifically, paints shall be reformulated as required to meet the local, State and Federal requirements.
- G. Coatings used in conjunction with potable water supply systems shall have NSF approval for use with potable water and shall not impart a taste or odor to the water.
- H. All rigging shall meet OSHA requirements, conform to industry standards and shall be operated in a safe manner. CONTRACTOR is responsible for the integrity of rigging connections. All rods and other tank appurtenances that will be used for rigging purposes shall be carefully checked for structural integrity before they are used for climbing or rigging. Deficiencies shall be reported and corrected before use.

## 1.13 SURFACES NOT TO BE COATED

- A. The following list of items shall not be coated unless otherwise noted.
  - 1. Stainless steel work.
  - 2. Aluminum.
  - 3. PVC.
  - 4. FRP.
  - 5. Flexible couplings and lubricated bearing surfaces.
  - 6. Electrical panels (noncarbon steel).
  - 7. Signs, nameplates, serial numbers, and operating instruction labels.
  - 8. Any code-requiring labels, such as Underwriters' Laboratories and Factory Mutual, or any equipment identification, performance rating, name or nomenclature plates.

## 1.14 PROTECTION OF STRUCTURES

- A. CONTRACTOR shall use extreme diligence to assure that adjacent vehicles, structures, buildings, equipment, hardware, fixtures, and other materials are protected against process and waste water, paint spillage, paint drips and other damage. Damage shall be corrected by cleaning, repairing or replacing the item as acceptable to CITY, at no additional cost to CITY.

## 1.15 SHIPPING, HANDLING AND STORAGE

- A. Products shall be delivered in manufacturer's original unopened containers and shall be subject to inspection by ENGINEER. Packages shall not be opened until they are inspected by ENGINEER and required for use. Each container shall have manufacturer's label, intact and legible. Label for each container shall contain the following:

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1. Manufacturer's name
  2. Type of paint
  3. Manufacturer's stock number
  4. Color name and number
  5. Instructions for thinning, where applicable
- B. Where thinning is necessary, only the product of the manufacturer furnishing the paint shall be used. All such thinning shall be done strictly in accordance with the manufacturer's instructions, and with the full knowledge of ENGINEER.
- C. Materials and their storage shall be in full compliance with the requirements of pertinent codes and fire regulations. All painting materials shall be stored under cover in a clean, dry, well-ventilated place protected from sparks, flame, direct rays of the sun or extreme temperatures. Storage shall be maintained at a temperature between 40° F and 90° F, unless the requirements of the manufacturer are more restrictive. Receptacles shall be placed outside buildings for paint gates and containers. Paint waste shall not be disposed of in plumbing fixtures, drains or on the ground.

#### 1.16 ADDITIONAL PAINT

- A. At the end of the project, CONTRACTOR shall turn over to CITY one five-gallon can of each type and color of paint, primer, thinner or other coating used in the field painting. If the manufacturer packages the material concerned in gallon cans, then it shall be delivered in unopened labeled cans as it comes from the factory. If the manufacturer does not package the material in gallon cans, and in the case of special colors, the materials shall be delivered in new gallon containers, properly closed with typed labels indicating brand, type, color, etc. The manufacturer's literature describing the materials and giving directions for their use shall be furnished in three bound copies. A type-written inventory list shall be furnished at the time of delivery.

### PART 2 -- PRODUCTS

#### 2.01 MATERIALS

- A. Table 09900-1 depicts the coatings referenced in Article 3.07, "Coating Schedule".

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**Table 09900-1  
Product Listing**

Reference Number	Description	Manufacturers Reference	
		Carboline	Sherwin-Williams
300	Resurfacer	Carboguard 501	Steel Seam FT 910
301	Epoxy Primer	Carboguard 891HS	Macropozy 646 PW
302	Epoxy	Carboguard 891HS	Macropoxy 646 PW
311	Zinc Rich Primer	Carbogzinc 859	Corothane I Galvapac NSF
312	Urethane	Carbothane 133HB	Acrolon 218 HS
313	Flourourethane	Carboxane 950	FluoroKem
314	Passivator	Galoseal WB	

- B. Coatings to be used inside of the water storage tank shall have NSF 61 certification. No lead containing protective coating materials may be used on this project.

2.02 EQUIPMENT

- A. CONTRACTOR shall provide the following equipment (or equal):

- Thermometer
- Steel surface temperature thermometers (2)
- Sling psychrometer
- Psychrometric charts
- Wind meter
- SSPC-VIS-1 surface preparation standard
- Keane-Tator Surface Comparator Number 372
- Wet film thickness gauge
- NBS Certified Coating Thickness Standards
- Dry film thickness gauge with certified thickness calibration plates
- Holiday Detector, low voltage type, Tinker and Razor Model M-1, Series 9533

PART 3 -- EXECUTION

3.01 INSPECTION OF SURFACES

- A. Before application of the prime coat and each succeeding coat, all surfaces to be painted shall be subject to inspection by ENGINEER. Any defects or deficiencies shall be corrected by CONTRACTOR before application of any subsequent coating.
- B. Samples of surface preparation and of painting systems shall be furnished by CONTRACTOR to be used as a standard throughout the job, unless omitted by ENGINEER.

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- C. CITY will inspect all phases of the Work to verify that it is in accordance with the requirements of the Specifications. CONTRACTOR shall facilitate this inspection as required, including allowing ample time for the inspections and safe access to the work.
- D. CONTRACTOR shall perform visual holiday inspection per SSPC TU 11 Standards.
- E. Hold point inspections may include, but are not limited to prepainting cleanliness, sufficiency of sanding for deglossing, exposed metal spot surface preparation, ambient conditions, paint application, film thickness measurement, film appearance and continuity, and adhesion. CONTRACTOR is not allowed to proceed with subsequent phases of the Work unless acceptable to CITY. Prior to demobilization in a particular section worked, a final acceptance inspection will be performed by ENGINEER.
- F. The inspection by ENGINEER in no way relieves CONTRACTOR of the responsibility to comply with all requirements of this specification, and to provide comprehensive inspections of its own to assure compliance with the acceptable Quality Control Inspection Plan. CONTRACTOR shall make available for CITY's review all quality control inspection documentation maintained in accordance with CONTRACTOR's Quality Control Inspection Plan.
- G. CONTRACTOR shall furnish, until final acceptance of the coating system, all equipment and instrumentation needed for self-inspection of all phases of the Work.
- H. Deviations or nonconformance are items that do not meet the specified requirements and require either rework or repair as determined by CITY. Deviations will be recorded by ENGINEER. CONTRACTOR's representative shall initial and date the nonconformance acknowledging a deviation exists. All deviations shall be brought into conformance prior to partial payment for the applicable area.

## 3.02 EQUIPMENT

- A. Effective oil and water separators in conformance with ASTM D 4285 shall be used in all compressed air lines serving spray painting and sandblasting operations to remove oil or moisture from the air before it is used. Separators shall be placed as far as practicable from the compressor.
- B. All equipment for application of the paint and the completion of the work shall be furnished by CONTRACTOR in first-class condition and shall comply with recommendations of the paint manufacturer.

## 3.03 WORK IN CONFINED SPACES

- A. CONTRACTOR shall provide and maintain safe working conditions for all employees. Fresh air shall be supplied continuously to confined spaces through the combined use of existing openings, forced-draft fans, or by direct air supply to individual workers. Paint fumes shall be exhausted to the outside from the lowest level in the contained space.
- B. Electrical fan motors shall be explosion proof if in contact with paint fumes. No smoking or open fires will be permitted in, or near, confined spaces where painting is being done.

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## 3.04 INITIAL INTERIOR CLEANING

- A. CONTRACTOR shall wash down the interior of the tank, collect and dispose of any sludge that may have accumulated.

## 3.05 SURFACE PREPARATION

- A. General: Paint surface preparation shall be as specified in the following or recommended by the paint manufacturer's published application instructions, whichever imposes the most stringent requirements.
- B. Surfaces to be painted shall be clean and dry, and free of dust, rust, scale and all foreign matter. No solvent cleaning, power or hand tool cleaning shall be permitted unless acceptable to CITY or specified herein.
- C. Except as otherwise provided, all preparation of metal surfaces shall be in accordance with SSPC Specifications SP-1 through SP-15. Where SSPC Specifications are referred to in these Contract Documents, the corresponding Pictorial Surface Preparation Standard shall be used to define the minimum final surface conditions to be supplied. Grease and oil shall be removed and the surface prepared by hand tool cleaning, power tool cleaning or blast cleaning in accordance with the appropriate Specification SP-1 through SP-15.
- D. Weld flux, weld spatter and excessive rust scale shall be removed by power tool cleaning as per SSPC-SP-3.
- E. Hardware accessories, machined surfaces, plates, lighting fixtures, and similar items in place prior to cleaning and painting, and not intended to be painted, shall be protected or removed during painting operations and repositioned upon completion of painting operations.
- F. Any abraded areas of shop or field applied coatings shall be touched up with the same type of shop or field applied coating, even to the extent of applying an entire coating, if necessary. Touch-up coatings and surface preparations shall be in addition to and not considered as the first field coat.
- G. Abrasives from blasting shall be thoroughly removed, using vacuums if necessary. No surface, which has been blasted, shall be painted until inspected by ENGINEER.
- H. Brackets: Prior to any field coating application, all unused brackets and supports shall be removed from the interior and exterior surfaces. All underlying areas shall be ground smooth. All weld burrs, weld spatter, scars and rough edges shall be ground smooth.
- I. Exterior Metal Surfaces: All ferrous metal surfaces shall be cleaned of all oil, grease, dirt in accordance with SSPC-SP-1. All exterior surfaces shall be cleaned to remove all existing paint, rust, dirt, mill scale and foreign matter by the recommended methods outlined in SSPC-SP-10 (NACE No. 2) with a 2-3 mil profile. Priming/Painting shall follow blasting before any evidence of corrosion occurs. If flash rust occurs prior to priming, the areas must be reblasted prior to primer application.

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- J. Metal Surfaces Exposed To Potable Water: All ferrous metal surfaces shall be cleaned of all oil, grease, dirt in accordance with SSPC-SP-1. All exterior surfaces shall be cleaned to remove all existing paint, rust, dirt, mill scale and foreign matter by the recommended methods outlined in SSPC-SP-10 (NACE No. 2) with a 2-3 mil profile. Priming/Painting shall follow blasting before any evidence of corrosion occurs. If flash rust occurs prior to priming, the areas must be reblasted prior to primer application.
- K. Pipe Flanges: All exposed flanged joints shall have the gap between adjoining flanges cleaned and sealed with a NSF approved single component Thiokol caulking to prevent rust stains.
- L. Shop Primed Surfaces: All shop-coated surfaces shall be protected from damage and corrosion before and after installation by treating damaged areas immediately upon detection. All shop coated surfaces which require more than minor touch-up, in the opinion of CITY, shall be repainted.
- M. Galvanized, Zinc and Copper Alloy Surfaces: All copper, zinc and galvanized metal surfaces shall be given one coat of metal passivator or metal conditioner before applying the prime coat, unless the coating intended to be used is identified by the manufacture to be applied to the surface directly. The passivator or conditioner shall be compatible with the complete paint system and shall be as identified on the coating schedule.

## 3.06 SHOP PAINTING

- A. All fabricated steel work and equipment shall receive a shop coat at the factory at least one shop coat of prime paint compatible with the paint system required by these specifications. Surface preparation prior to shop painting shall be as specified. All shop painted items shall be properly protected and stored until they are incorporated in the work. Any painted surfaces that are damaged during handling, transporting, storage, or installation shall be cleaned, scraped, and patched before field painting begins so that the work shall be equal to the original painting received at the shop. Steel work that is to be assembled on the site shall likewise receive a minimum of one shop coat of paint at the factory. Surfaces of exposed members that will be inaccessible after erection shall be prepared and painted before erection.
- B. CONTRACTOR shall specify the shop paints to be applied when ordering equipment in order to assure compatibility of shop paints with field paints. The paints and surface preparation used for shop coating shall be identified on shop drawings submitted to CITY for review. Shop paint shop drawings will not be reviewed until the final project paint system has been submitted by CONTRACTOR and reviewed by ENGINEER.
- C. Shop primed surfaces shall be inspected in the field and approved by the paint manufacturer prior to the application of any field coatings. The coating manufacturer shall verify the primer thickness and adhesion. Failure of the shop primer to meet manufacturer's requirements shall be sufficient cause for removal of the shop primer, recleaning and application of a field prime coat at no additional expense to the CITY. Recoat windows shall be adhered to and/or proper procedures followed if maximum recoat time frames are exceeded.

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3.07 PREPARATION OF MATERIALS

- A. Mechanical mixers, capable of thoroughly mixing the pigment and vehicle together, shall mix the paint prior to use where required by manufacturer's instructions; thorough hand mixing will be allowed for small amounts up to one gallon.
- B. Pressure pots shall be equipped with mechanical mixers to keep the pigment in suspension, when required by manufacturer's instructions. Otherwise, intermittent hand mixing shall be done to assure that no separation occurs. All mixing shall be done in accordance with SSPC Volume 1, Chapter 4, "Practical Aspects, Use and Application of Paints" and/or with manufacturer's recommendations.
- C. Catalysts or thinners shall be as recommended by the manufacturer and shall be added or discarded strictly in accordance with the manufacturer's instruction.
- D. When using two component materials, only complete kits shall be mixed.

3.08 COATING SCHEDULE

- A. General: CONTRACTOR shall adhere to this coating schedule, providing those paints named or equal. DFT shall mean the total minimum dry film thickness per application measured in mils. Products are referenced by numbers listed in Article 2.01, "Materials," and listed in Table 09900-1.
- B. Metal Surfaces, Exterior (Atmospheric) Exposure
  - 1. Metal surfaces exposed to the atmosphere that are not inside of the water storage tank including the following types of surfaces shall be painted as described below:
    - a. Steel storage tanks including riser and rods.
    - b. Piping, valves and pipe supports.
    - c. Exposed nonfactory painted surfaces of electric panels, conduit, vents, etc.
    - d. Ladders, handrails, hatches and vents.
    - e. Miscellaneous steel shapes, angles, etc.
    - f. Rigging attachment points that are to remain in place.

<u>Application</u>	<u>Product No. and Description</u>	<u>DFT (Min.)</u>
Prime	311 Zinc Rich Primer	3.0
Stripe Coat	311 Zinc Rich Primer	-
Intermediate Coat	312 Urethane	3.0
Finish Coat	313 Flourourethane	<u>2.0</u>
Min. Total		11.0 Mils

C. Metal Surfaces, Potable Water Exposure

09900

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Painting  
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EXHIBIT 3

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1. Interior metal surfaces (submerged and nonsubmerged) that come into contact with potable water, including but not limited to the following types of surfaces, shall be painted as follows:
  - a. Water storage tank interior.
  - b. Riser interior.
  - c. Ladders and grates.
  - d. Railings.
  - e. Piping, valves and supports.
  - f. Miscellaneous steel shapes, angles, etc.

<u>Application</u>	<u>Product No. and Description</u>	<u>DFT (Min.)</u>
Resurfacer	300 Resurfacer	-
Prime	301 Epoxy Primer	3.0 - 5.0
Stripe coat	301 Epoxy Primer	-
Intermediate coat	302 Epoxy	4.0
Finish coat	302 Epoxy	<u>5.0 - 6.0</u>
	Min. Total	12.5 MILS

3.09 COATING APPLICATION

- A. General: All paint shall be applied by experienced painters with top quality, properly styled brushes, rollers, sprayers or other applicators reviewed by ENGINEER and the paint manufacturers Coatings shall be applied in accordance with the requirements of this Section, the coating manufacturer’s product data sheet, and SSPC-PA1. In the event of a conflict between the manufacturers’ technical data and the requirements of this Section, this Section shall govern unless the requirements of the manufacturer are more restrictive.
- B. Quality of Surface Preparation: CONTRACTOR shall verify that the surface exhibits the specified degree of cleaning immediately prior to painting. CONTRACTOR shall reclean deficient areas prior to applying coatings. If contamination of the surface (e.g., dust) occurs prior to the application of the first full coat, all contamination shall be removed prior to painting.
- C. Time Restrictions: Coatings shall only be applied to bare metal surfaces on the same day that the surface preparation was performed.
- D. Ambient Conditions Restrictions: Coatings are to be applied under the following conditions. If the manufacturer’s requirements are more restrictive, the manufacturer’s conditions shall govern.
  1. Surface and Air Temperatures: Between 50°F and 100°F.

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2. Relative Humidity: Less than 85%.
  3. Dew Point: Surface temperature shall be at least 5°F warmer than the dew point temperature of the surrounding air.
  4. Dampness / Rain: Coatings are not to be applied to surfaces that are damp, have free standing water, during rain, during fog, or similar detrimental weather conditions.
- E. Any paint that is exposed to unacceptable conditions (e.g. rain or dew) shall be removed and replaced prior to adequate curing.
- F. The work areas which have been blasted and received any coating shall be protected as not to have ongoing blasting and painting operation affect previously prepared surfaces.
- G. The primer shall not be applied on a nonprepared surface. Previous blasted and primed surfaces shall be tied in by blasting 2-inches into primed area.
- H. The number of coats specified shall be minimum number acceptable. Apply additional coats as needed to provide a smooth, even application and achieve the specified DFT.
- I. Application Methods: Regardless of application method used, paint drips, splashes, and spills must be controlled.
1. Roller Application: Nap size, roller quality and application technique shall be selected that will properly wet the substrate and produce a smooth, uniform film. When applying paint to circular or tubular structural elements, roll circumferentially wherever feasible rather than longitudinally for film uniformity.
  2. Brush Application: Bristle lengths, bristle quality and application techniques shall be selected that will properly wet the substrate and produce a smooth, uniform film. Because of the emphasis on aesthetics on this project, brushes shall be used only when the use of rollers is not feasible.
  3. Daubers: On surfaces such as the back side of the anchor bolts which inaccessible for paintbrushes, sheepskins, mitts or daubers especially constructed for the purpose shall be used when acceptable to the CITY.
  4. Sprayers: Paint may be applied with spraying equipment that is appropriate for the job conditions and is acceptable to the manufacture. If the material has thickened or must be diluted for application by spray gun, each coat shall be built up to the same film thickness achieved with undiluted brushed-on material. Where thinning is necessary, only the products of the particular manufacturer furnishing the paint shall be used; and all such thinning shall be done in strict accordance with the manufacturer's instructions, as well as with the full knowledge of CITY.
- J. Coverage and Continuity: Aesthetics of the application is critical. Each coat shall be applied at the proper consistency in a workmanlike manner to assure thorough wetting of the substrate or underlying coat, and to achieve a smooth, streamline surface. All shadow-through, pinholes, bubbles, blisters, fish eyes, skips, misses, drips, lap marks

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between applications, or other visible discontinuities in any coat shall be repaired before the application of subsequent coats. Runs or sags may be brushed out while the material remains wet. All surfaces shall be thoroughly coated with special attention to hard-to-reach areas, and irregular surfaces such as crevices and fasteners. When coating configurations such as bolts, material shall be applied from multiple directions to assure complete coverage.

- K. Alternating Coats: Provide at least two shade difference between coats. The finish coat shall have sufficient hiding power to cover intermediate coat color. Visible detection of the underlining coat will not be acceptable.
- L. Recoat Times: Each coating shall only be applied after the previous coat has been allowed to dry as required by the manufacturer's written instructions, but as soon as possible to minimize the length of time that the coating is exposed to dust and contamination. Coatings shall not be allowed to remain exposed for longer than the manufacturer's written instructions prior to overcoating. If a coat exceeds the manufacturer's maximum recoat times for any reason, the coating shall be removed and replaced. As an alternative, the coating manufacturer can provide written instructions for specialized preparation (e.g., scarifying the surface) to properly prepare the surface to receive the next coat. The specialized steps can be undertaken only if acceptable to CITY in writing. The specialized cleaning or removal and replacement of the coatings shall be performed at no additional cost to CITY.
- M. Surface Cleanliness Between Coats: The surface of each coat shall be thoroughly cleaned prior to the application of the next to remove dirt, dust, and other interference material. Particular attention shall be paid to the removal of detrimental residue from surfaces such as corners and pockets. Surfaces shall be cleaned by brushing, vacuuming, or blowing down with compressed air. If the coatings are slightly tacky, methods such as vacuuming shall not be used. If grease or oil has become deposited on the surface of any of the applied coats, the contaminants shall be removed by solvent cleaning in accordance with SSPC-SP-1 prior to the application of the next coat.
- N. Stripe Coating: A stripe coat of the first full coat of epoxy shall be applied to all edges, crevices, and irregular surface configurations such as bolts. The stripe coat shall be worked in by brush and allow it to dry sufficiently prior to the application of the full coat in order that the stripe coat does not "pull" during application of the full coat.
- O. Nonskid: Surfaces requiring nonskid finish shall receive a 0.75-1.0 pounds of silica sand sprinkled on to the wet surface of the intermediate coat. After allowing to dry without backrolling, sweep off any loose grit.
- P. Wet Film Thickness: A wet film thickness gage shall be used in accordance with ASTM D 4414 to verify the thickness of each coat at the time of application. The thickness of each coat shall be strictly controlled to assure that the minimums necessary to achieve complete coverage are applied. Frequent measurement of wet film thickness is required to assure that proper coating thickness is being applied.
- Q. Dry Film Thickness: The dry film thickness objectives for the project are indicated in the Coating Schedule. The thickness of the existing coating must be accounted for

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when measuring the thickness of the newly applied coats. Coating thickness shall be determined by the use of a properly calibrated "Nordson-Mikrotest" (or equal) dry mil thickness gauge or other measuring instrument determined to be appropriate by CITY. Measurements shall be made in accordance with SSPC PA-2.

- R. Coating Adhesion: All applied coats shall be well adhered to each other and to the substrate. If the application of any coat causes lifting of an underlying coat, or there is poor adhesion between coats or to the substrate, the coating shall be removed in the affected area and the material reapplied. If the adhesion of the system is suspect, adhesion tests shall be conducted in accordance with ASTM D 3359, ASTM D 4541 or ASTM D 6677 as indicated by CITY, and all test area repaired. The acceptance criteria for the testing will be established by the coating manufacturer and CITY.
- S. Destructive Testing: If there are questions regarding the nondestructive measurements of coating thickness, a Tooke Gage will be used when authorized by CITY. Measurements shall be made in accordance with ASTM D 4138. Areas damaged by the testing shall be marked and repaired, whether created by ENGINEER or CONTRACTOR.

## 3.10 CURING

- A. The tank shall remain empty with all hatches and vents open for a minimum of seven days following the last coating operations. Forced air ventilation shall be provided, as required by paint manufacturer, to facilitate complete and timely curing. Required ventilation shall be applied through the County and/or the City of Fort Lauderdale (as required by the agencies with jurisdiction) and curing operation, including overnight, over weekends, over holidays, between coating and during the fourteen day curing period.
- B. During weekends and during the curing period, CONTRACTOR shall monitor ventilating equipment. During weekends, holidays and curing period, CONTRACTOR shall provide all maintenance required to make immediate repairs in the event of equipment failure.
- C. Following the minimum curing time, CITY's representative, along with a representative of the paint manufacturer will perform testing to insure that the coatings are properly cured. At a minimum, MEK rub tests will be conducted. CONTRACTOR is required to obtain from the paint manufacturer certification that the coatings have been applied in accordance with all recommendations and are in proper state of cure prior to disinfection and filling of the tank.
- D. Disinfection of the tank will be performed in accordance with Specification Section 15430. The CONTRACTOR shall be responsible for disinfection of the tank upon completion of the touch-up repairs.

## 3.11 HOLIDAY TESTING

- A. The total coating system on all interior surfaces below the overflow shall be tested by the CONTRACTOR in the presence of the ENGINEER with a wet-sponge, low-voltage holiday detector after the coating system has cured. The sponge shall be kept saturated with an electrolyte (5% sodium chloride) and a surfactant (2% household

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detergent). During testing the wet sponge shall be kept in continuous contact with the painted surface. Locations where holidays are detected shall be marked for repair and retested after repair work has been completed. Holiday testing shall be performed in accordance with SSPC SPO-188.

## 3.12 REPAIR OF DAMAGE AND UNACCEPTABLE COATINGS

- A. Surface Preparation of Localized Areas: For the repair of localized damage, corrosion, and unacceptable coatings, the surface shall be prepared by solvent cleaning in accordance with SSPC-SP-1 using a solvent that is acceptable to the paint manufacturer. If the damage does not extend to the substrate, the area shall be prepared by power tool cleaning to remove all loose material in accordance with SSPC-SP-1 or SP-3. If the damage extends to the substrate, the affected areas shall be prepared in accordance with SSPC-SP-11.
- B. Feathering of Repair Areas: CONTRACTOR shall feather sand the existing coating surrounding each repair location. A distance of one to two inches shall be feather sanded to provide a smooth, tapered transition into the existing intact coating. The edges of coating around the periphery of the repair areas shall be verified that they are tight and intact by probing with a dull putty knife in accordance with the requirements of SSPC-SP-3. The existing coating in the feathered area shall be roughened to assure proper adhesion of the repair coats.
- C. Coating Application in Repair Areas: When the bare substrate is exposed in the repair area, all coats of the system shall be applied to the specified thickness. When the damage does not extend to the bare substrate, only the damaged coat(s) are to be reapplied. The thickness of the system in overlap areas shall be maintained within the specified total thickness tolerances. When, in the judgment of CITY, the finish coat repair has a spotted appearance, a cosmetic coat of finish shall be applied over the spot areas and adjacent surfaces to blend the repair area into the surrounding coating.

## 3.13 MATERIAL SAFETY DATA SHEETS

- A. Material Safety Data Sheets (MSDS) shall be maintained at the job site for each chemical product on the job site, including but not limited to coatings, thinners, solvents, cleaning agents, abrasives, welding materials, and flexible sealant material.
- B. CONTRACTOR and CITY shall exchange MSDS of any hazardous chemicals that are or will be stored at the Project site. CONTRACTOR and CITY shall each appoint an individual who shall be responsible for overseeing the proper exchange of information regarding toxic chemicals, potential hazards, safe procedures, and proper protective equipment, etc. It is anticipated that CITY will not have materials requiring MSDS on site during the work-in-process.

## 3.14 HOUSEKEEPING AND WASTE DISPOSAL

- A. The accumulation of empty paint cans, combustibles, and other debris is unacceptable. Waste chemical solutions, oily rags, and waste shall be removed from the site daily.

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- B. All paint drips and splashes shall be removed from surfaces not intended to be painted. Removal shall be by proper methods of washing and scraping, using care not to scratch or otherwise damage finished surfaces.
- C. CONTRACTOR shall handle, store, transport, and dispose of all hazardous and nonhazardous project waste in strict accordance with Federal and State regulations.

## 3.15 SCHEDULE OF COLORS

- A. All colors shall be designated by CITY during shop drawing review. CONTRACTOR shall submit color samples to CITY as specified in Article 1.07. CONTRACTOR shall submit suitable samples of all colors (including custom colors as may be required) and finishes for the surfaces to be painted, or on portable surfaces when required by CITY. No variation shall be made in colors without being acceptable to CITY. Color names and/or numbers shall be identified according to the appropriate color chart issued by the manufacturer of the particular product in question.

## 3.16 CLEANING

- A. CONTRACTOR shall protect at all times, in areas where painting is being done, floors, materials of other crafts, equipment, vehicles, fixtures, and finished surfaces adjacent to paint work. Cover all electrical wall plates, surface hardware, nameplates, gauge glasses, etc., before start of painting work.
- B. At completion of the work, remove all paint where spilled, splashed, splattered, sprayed or smeared on all surfaces, including glass, light fixtures, hardware, equipment, painted and unpainted surfaces.
- C. Work areas shall be at all times kept free from accumulation of waste material and rubbish caused by the work. At the completion of the painting, all tools, equipment, rigging, scaffolding, surplus materials, and all rubbish shall be removed and the area left clean.

## 3.17 FIRST ANNIVERSARY INSPECTION

- A. The interior and exterior surfaces of the tank shall be inspected by CITY and CONTRACTOR at approximately one year after the coating work has been completed to determine whether any repair work is necessary.
- B. CITY shall establish a date for inspection and shall notify the CONTRACTOR at least 30 days in advance. If an inspection date is not established within 13 months after completion of painting work, the first anniversary inspection shall be waived.
- C. CITY shall partially or fully drain the tank and provide safety equipment, suitable interior lighting and ventilation for the tank inspection, or CITY may hire a qualified diver to inspect the tank.
- D. Locations where coating has peeled, bubbled, or cracked or where corrosion is evident shall be considered as failure of the coating system. The CONTRACTOR shall make repairs at all points where failures are observed by removing the deteriorated coating, cleaning the surface, and recoating with the same coating system. If the area of

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failures exceeds 25% of the area of a portion of the tank surface, then for that portion, the entire coating system shall be removed and recoated. For the purposes of determining the need for complete recoating, the inside roof, shell, and floor and the outside roof and shell shall each be considered separately. The CITY may, at any point during or after the work under this Specification, use destructive test instruments to analyze coating failures observed. The CITY will establish a starting date and a reasonable time of completion for remedial work.

- E. All remedial work performed shall be guaranteed for two years from completion for defects of materials and workmanship. The CITY may conduct a first anniversary inspection of remedial work and require repair of failures pursuant to this Specification.

- END OF SECTION -

**DIVISION 13**  
**SPECIAL CONSTRUCTION**



## PROJECT 11887

## SECTION 13001 – STORAGE TANK REPAIRS

PART 1 -- GENERAL

## 1.01 THE REQUIREMENT

- A. Removal of paint as specified in Sections 09805 and 09900 shall be completed prior welding being initiated as specified herein. Welding over coated steel surfaces is not permissible.

## 1.02 THE REPORT

- A. The Second Avenue Water Storage Tank “Elevated Water Storage Tank Inspection Report” report completed by Tank Engineering and Management Consultants, Inc. on June 2008 was used in preparation of this specification. The report includes information collected during the inspection as well as pictures of the interior and exterior of the tank taken during the inspection. The report is included for reference and is located in Appendix A of the Specifications Package

## 1.02 REFERENCES

- A. General: The work shall comply with the most recent standards which are listed below.

- B. American National Standard Institute/National Sanitation Foundation (ANSI/NSF):

- 1. Standard 61 Drinking Water Systems Components-Health Effects

- C. American Water Works Association (AWWA):

- 1. D100 Welded Steel Tanks for Water Storage

- 2. C652 Disinfection of Water Storage Facilities

- 3. M42 Steel Water-Storage tanks

- 4. C207 Steel Pipe Flanges for Waterworks Service

## 1.03 ACCESS

- A. The CONTRACTOR shall provide access that complies with requirements set forth by regulatory agencies and herein. The CONTRACTOR shall provide safe and convenient access necessary to perform the work and safe and convenient access necessary to inspect the work.

- B. The CONTRACTOR shall verify the adequacy of any part of the existing tank being used for rigging, containment and / or other work including belly rods. Any attachments added to the tank for rigging, containment and/or work-in-process or using structural items on the tank for rigging, containment and/or work-in-process shall be at the CONTRACTOR's risk and be restored to the original condition at the completion of the work.

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- C. During non-working hours the site and equipment related to the work-in-process shall be secured. The tank interior dry access shall be secured at the end of the each workday.

## 1.04 SUBMITTALS

- A. Submit the following in accordance with Section 01300 "Submittals".
1. Shop Drawings and Reports, signed and sealed by the CONTRACTOR's structural engineer licensed in Florida as a Professional Engineer, shall include the following:
    - a. Layout drawings indicating all structural shapes, sizes, and dimensions.
    - b. Detailed drawings indicating welding, jointing, anchoring and connection details.
    - c. Report assessing the condition of the tank support column cross-brace rods. The report shall provide recommendations on the existing rods, turnbuckles, tensioning, and whether any adjustments should be made to the turnbuckle tensioning system. Specific adjustments, if recommended, shall be identified along with methods to perform and check the adjustments in the field.
  2. Manufacturer's installation instructions.
  3. Copy of valid certification for each person who is to perform field welding.
  4. Certified weld inspection reports, when required.
  5. Welding procedures.
  6. A written plan of action concerning how welding repair damage, abrasive and/or paint damage to automobiles and property will be handled, this to include a process for quick removal of the abrasive or paint, and who will do the work.

## 1.05 QUALITY CONTROL

- A. Welders shall be certified in accordance with AWS D1.1 Structural Welding Code.
- B. The CONTRACTOR shall notify and make available to the ENGINEER for observation the fit-up of any new and/or re-placement parts prior to welding and following post-weld cleanup. The CONTRACTOR shall notify and make available to the ENGINEER for observation all surfaces prior to coating. The ENGINEER will issue a written report at the site each day. The reports will be distributed to the ENGINEER, CITY, and CONTRACTOR.

PART 2 – PRODUCTS

## 2.01 ROOF VENT

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- A. Roof vent / screen assembly shall be in accordance with AWWA D100 and have a capacity to pass air so that at the maximum possible rate of water, either entering or leaving the tank, excessive pressure will not develop. Vent screen shall be designed and constructed so as to prevent the entrance of birds, insects or animals.

PART 3 – EXECUTION

## 3.01 GENERAL

- A. All new fabricated steel components and repairs shall be designed, signed, and sealed by the CONTRACTOR's structural engineer. The engineer must be a Florida licensed Professional Engineer. CONTRACTOR shall field measure all dimensions prior to fabrication or ordering any materials or parts. No additional compensation will be made to the CONTRACTOR for items that have to be modified, cut, or replaced because of inaccurate dimensions used in ordering or fabricating items for the tank.

## 3.02 FIELD QUALITY CONTROL

- A. The CONTRACTOR's Superintendent shall inspect, document, and report daily to the ENGINEER any surfaces that are discovered during rigging or blasting operation that may require repair or adversely affect the structure or performance of the coating being applied.

## 3.03 REPAIRS

- A. Furnish and install roof vent with a shielded clog resistant vent. Roof vent shall have a flanged base and removable top vent cover with stainless steel screens. The modification shall meet AWWA D100 Standards.
- B. Remove existing roll around ladder and supports and furnish and install new fixed ladder to replace existing roll around ladder. Remove other existing ladders and supports and furnish and install new ladders on the tank interior, riser interior, riser exterior and catwalk to balcony. Upon removal of the ladders, all penetrations from removing bolts and supports shall be repaired before installation of the new ladders. Ladders shall be OSHA compliant fixed ladder with safety climb device / cable guide. Ladder support brackets shall be steel with a minimum thickness of 3/8 inch. Ladder shall be all steel construction.
- C. Increase all handrail / guard rail height to make OSHA compliant. Railing shall match existing railing and shall be fabricated from steel flat bar and angles with a minimum thickness of 3/8 inch.
- D. Furnish and install a stainless steel grating to cover the wet riser in its entirety. Furnish in segments as necessary to facilitate installation.
- E. Remove existing inner access ladders and supports, and replace tank riser access ladders with OSHA compliant ladder and install safety climb device on ladders. Ladder support brackets shall be Type 304 stainless steel with a minimum thickness of 3/8". Ladders shall be all steel construction.

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- F. Furnish and install 30-inch diameter manway on tank roof in same location as the existing manway. Manway shall consist of a flanged, watertight, gasketed manway mounted to the exterior of the wet riser column and supported either by a hinge or davit arm. Structural stiffeners shall be provided so as not to compromise the structural integrity of the existing tank. CONTRACTOR shall submit sealed design of new manway to ENGINEER.
- G. Pit filling and welding of voids.
- H. Replace existing sample lines, boxes, lighting, conduit wire, supports and other items as indicated in the Contract Documents.

- END OF SECTION -

**DIVISION 15**  
**MECHANICAL**



## PROJECT 11887

## SECTION 15020 - PIPE SUPPORTS

PART 1 -- GENERAL

## 1.01 THE REQUIREMENT

- A. The CONTRACTOR shall provide all tools, supplies, materials, equipment, and all labor necessary for the furnishing, construction, and installation of all pipe supports, hangers, guides, and anchors shown, specified, or required for a complete and operable piping system, in accordance with the requirements of the Contract Documents.

## 1.02 REFERENCE SPECIFICATIONS, CODES, AND STANDARDS

A. Commercial Standards:

ANSI / ASME B31.1            Power Piping

ANSI / ASME B31.3            Process Piping

ASTM A 123                    Specifications for Zinc (Hot-Galvanized) Coatings on Products Fabricated from Rolled, Pressed, and Forged Steel Shapes, Plates, Bars and Strip.

## 1.03 CONTRACTOR SUBMITTALS

- A. The CONTRACTOR shall submit shop drawings prior to fabrication or installation complete shop drawings of all pipe supports, hangers, anchors, and guides, as well as calculations for special supports and anchors, in accordance with Section 01300 - Submittals.

PART 2 -- PRODUCTS

## 2.01 GENERAL REQUIREMENTS

- A. The CONTRACTOR shall note that all pipe support locations are not shown on the Drawings and shall follow the Specifications herein in locating supports. Where deviations and modifications are required, they shall be made subject to review by the CITY.
- B. Code Compliance: All piping systems and pipe connections to equipment shall be properly supported, to prevent undue deflection, vibration, and stresses on piping, equipment, and structures. All supports and parts thereof shall conform to the requirements of ANSI/ASME B31.1 and ANSI / ASME B31.3, except as supplemented or modified by these Specifications. Supports for plumbing piping shall be in accordance with the latest edition of the applicable plumbing code, or local administration requirements.
- C. All piping shall be rigidly supported from the building structure by approved hangers, inserts, or supports. No piping shall be supported from other piping or from metal stairs, ladders, and walkways unless specifically permitted by the CITY.
- D. Unless otherwise indicated on the Contract Drawings, piping supports shall consist of fabricated 316 Stainless Steel supports as specified below.

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2.02 316 STAINLESS STEEL CHANNEL SUPPORTS

- A. Pipe mounted on supports fabricated from 1 5/8 X 1 5/8 UNISTRUT (or equal) 316 stainless steel channels with Type 316 stainless steel straps, and 316 stainless steel lock nuts. Supports shall be attached to walls and slabs by 3/8-inch diameter, 6-inch long Type 316 stainless steel anchor bolts with lock nuts. Bolt support spacing shall be maximum 12-inch O.C.

2.03 PIPE SUPPORT SPACING

- A. The distance between supports for each size of pipe shall not exceed those listed in the attached schedule. However, if the pipe size to be supported is not listed in the schedule, the next smaller nominal pipe size spacing shall be used. In all cases, there shall be a minimum of one support per laying length of pipe on uninterrupted horizontal runs. This support shall be placed within one foot of the joint. If the pipe manufacturer recommends a smaller spacing interval than specified herein, then the manufacturer's spacing shall be used.
- B. The distance between supports shall not exceed that listed in the following schedule unless otherwise indicated on the Contract Drawings:

<u>Nominal Pipe Size (in.)</u>	<u>Metallic Piping (ft.)</u>	<u>Plastic, Fiberglass and Copper Piping (ft.)</u>
1/2	5	3
3/4 to 1-1/2	6	3

2.04 METAL FRAMING SYSTEMS

- A. A metal framing system as manufactured by Unistrut, Globe-Strut or approved equal may be used for supporting the piping system. The metal framing system shall be designed and installed according to manufacturer's recommended procedure and shall be capable of supporting the piping system as specified herein.
- B. Channels, inserts and closure strips shall be cold formed mild steel conforming to ASTM A-245.
- C. Fittings shall be Hot Rolled Steel conforming to ASTM A-307. Fasteners shall conform to ASTM A-307. All pieces shall be hot-dip galvanized after fabrication, unless otherwise noted on the Drawings.

2.05 COATING

- A. Coating: All fabricated pipe supports, other than stainless steel or nonferrous supports, shall be blast-cleaned after fabrication and coated in accordance with Section 09900, Painting.

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PART 3 – EXECUTION

## 3.01 FABRICATION

- A. Pipe hangers and supports shall be fabricated and installed by experienced welders and fitters, using the best welding procedures available. Welding shall conform with Section entitled "Metal Fabrications". Fabricated supports shall be neat in appearance without sharp corners, burrs, and edges.

## 3.02 INSTALLATION

- A. General: All pipe supports, hangers, brackets, anchors, guides, and inserts shall be fabricated and installed in accordance with the manufacturer's printed instructions and ANSI/ASME B31.1 and ANSI / ASME B31.3. All concrete inserts for pipe hangers and supports shall be coordinated with the formwork.
- B. Appearance: Pipe supports and hangers shall be positioned in such a way as to produce an orderly, neat piping system. All hanger rods shall be vertical, without offsets. Hangers shall be adjusted to line up groups of pipes at the proper grade for drainage and venting, as close to ceilings or roofs as possible, without interference with other Work.
- C. Pipe Support Spacing: The distance between supports for each size of pipe shall not exceed those specified in 2.03.

- END OF SECTION -

**DIVISION 16**  
**ELECTRICAL**



## PROJECT 11887

## SECTION 16010 - BASIC ELECTRICAL REQUIREMENTS

PART 1 -- GENERAL

## 1.01 RELATED SECTIONS

- A. Requirements specified within this section apply to all sections in Division 16, ELECTRICAL. Work specified herein shall be performed as if specified in the individual sections.

## 1.02 ELECTRICAL SUBCONTRACTOR QUALIFICATIONS

- A. The electrical subcontractor shall meet or exceed the criteria described below:
1. The electrical subcontractor shall be licensed in the State of Florida.
  2. The electrical subcontractor shall have, in their employ, the following full time employees that will be assigned to perform the electrical work of this contract:
    - a. A minimum of (1) Licensed Master Electrician who is overall responsible for the supervision of personnel performing the construction, installation startup and testing of all electrical related facilities and systems.
    - b. A minimum of (1) Licensed Journeyman Electrician responsible for the daily construction activities and guidance of the electrical subcontractor's on site employees. The Licensed Journeyman's primary assignment will be the construction of the electrical facilities of this project until project completion. The Licensed Journeyman shall be certified in Palm Beach County or shall meet the reciprocity standards of Florida State Statue 489 Part II.
  3. The electrical subcontractor shall not be involved in any current or pending litigation which may have a material negative impact on the ability to complete the project. The electrical subcontractor shall provide a statement advising all current or pending litigations.

## 1.03 DESIGN REQUIREMENTS

- A. All electronic boards as part of electrical equipment shall meet the atmospheric conditions of the space the equipment is installed in. All electronic boards which are not installed in a conditioned environment shall be fungus-resistant.
- B. All electrical equipment shall be rated for the conditions the equipment is installed in.

## 1.04 STANDARDS, CODES, PERMITS, AND REGULATIONS

- A. Perform all work; furnish and install all materials and equipment in full accordance with the latest applicable rules, regulations, requirements, and specifications of the following:
1. Local Laws and Ordinances.

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2. State and Federal Laws.
  3. National Electrical Code (NEC).
  4. State Fire Marshal.
  5. Underwriters' Laboratories (UL).
  6. National Electrical Safety Code (NESC).
  7. American National Standards Institute (ANSI).
  8. National Electrical Manufacturer's Association (NEMA).
  9. National Electrical CONTRACTOR'S Association (NECA) Standard of Installation.
  10. Institute of Electrical and Electronics Engineers (IEEE).
  11. Insulated Cable Engineers Association (ICEA).
  12. Occupational Safety and Health Act (OSHA).
  13. National Electrical Testing Association (NETA).
  14. American Society for Testing and Materials (ASTM).
  15. 2007 Florida Building Code, including Broward County amendments.
- B. Conflicts, if any, which may exist between the above items, will be resolved at the discretion of the CITY.
- C. Wherever the requirements of the Specifications or Drawings exceed those of the above items, the requirements of the Specifications or Drawings govern. Code compliance is mandatory. Construe nothing in the Contract Documents as permitting work not in compliance with these codes.
- D. Obtain all permits and pay all fees required by any governmental agency having jurisdiction over the work. Arrange all inspections required by these agencies. On completion of the work, furnish satisfactory evidence to the CITY that the work is acceptable to the regulatory authorities having jurisdiction.
- 1.05 ELECTRICAL COORDINATION
- A. Work Provided Under this Contract:
1. Demolish and remove all existing electrical equipment including lighting, receptacles, wire, conduit, wiring troughs (gutters), junction boxes, terminal junction boxes, abandoned boxes and raceways as described in the drawings and specifications complete in place.

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2. Provide and install all electrical equipment indicated on the drawings and described in the specifications including wire, raceways, flood lighting, air craft collision avoidance lighting, security cameras, convenience outlets, intrusion switches, etc. complete in place.
  3. Provide and install new lighting and convenience power systems, indicated on the drawings, complete in place.
  4. Provide and install all new underground conduit and wiring indicated on drawings complete in place.
  5. Provide and install all grounding systems as described in the drawings and specifications, complete in place.
  6. Provide all miscellaneous electrical including switches, terminations, fittings, wiring, conduit, junction boxes, etc. not specified but obviously necessary for a complete working system in place.
- B. Construction Constraint: Aircraft obstruction lighting shall be energized and functional at all times during construction. CONTRACTOR shall keep the existing associated electrical equipment for the tank lighting including tank lighting timer, conduit and wiring, etc. until the new service, service equipment (MCC), lighting transformer, panelboard and lighting contactor are energized and lighting circuits (conduit and wires) are ready to connect to existing tank lighting circuit. CONTRACTOR shall perform transition and testing during daylight hours and shall not leave the tank without a working tank lighting system at any time. When new electrical service is energized and new tank lighting control is active, tested and properly functional, CONTRACTOR shall demolish the remaining of the existing electrical service equipment and tank lighting control, complete.
- 1.06 SUBMITTALS
- A. Quality Control Submittals:
1. Voltage Field Test Results.
  2. Factory test certification and reports for all major electrical equipment.
- B. The following information shall be provided for electrical equipment furnished under specifications 16050 Basic Electrical Materials and Methods
1. A copy of each specification section, with addendum updates included, and all referenced and applicable sections, with addendum updates included, with each paragraph check-marked to indicate specification compliance or marked to indicate requested deviations from specification requirements. Check-marks (√) shall denote full compliance with a paragraph as a whole. If deviations from the specifications are indicated, and therefore requested by the CONTRACTOR, each deviation shall be underlined and denoted by a number in the margin to the right of the identified paragraph. The remaining portions of the paragraph not underlined shall signify

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compliance on the part of the CONTRACTOR with the specifications. The submittal shall be accompanied by a detailed, written justification for each deviation.

- C. Electrical equipment submittals shall be made by specification section. Submit one package per specification section and do not group multiple specification sections under one submittal package.
- D. Provide complete conduit and equipment layouts: a scaled plan layout of the electrical conduits on tank structures and showing spatial relationships of all equipment. Minimum scale shall be  $\frac{1}{4}''=1'-0''$ .

## 1.07 ENVIRONMENTAL CONDITIONS

- A. All process equipment areas shall be considered wet locations.

## 1.08 INSPECTION OF THE SITE AND EXISTING CONDITIONS

- A. The Electrical Drawings were developed from past record drawings and information supplied by the CITY. Verify all scaled dimensions prior to submitting bids.
- B. Before submitting a bid, visit the site and determine conditions at the site and at all existing structures in order to become familiar with all existing conditions and electrical system which will, in any way or manner, affect the work required under this Contract. No subsequent increase in Contract cost will be allowed for additional work required because of the CONTRACTOR's failure to fulfill this requirement.
- C. Carry out any work involving the shutdown of the existing services to any piece of equipment now functioning in existing areas at such time as to provide the least amount of inconvenience to the CITY. Do such work when directed by the CITY.
- D. After award of Contract, locate all existing underground utilities at each area of construction activity. Protect all existing underground utilities during construction. Pay for all required repairs without increase in Contract cost, should damage to underground utilities occur during construction.

## 1.09 RESPONSIBILITY

- A. The CONTRACTOR shall be responsible for:
  1. Complete systems in accordance with the intent of these Contract Documents.
  2. Coordinating the details of facility equipment and construction for all Specification Divisions which affect the work covered under Division 16, ELECTRICAL.
  3. Furnishing and installing all incidental items not actually shown or specified, but which are required by good practice to provide complete functional systems.

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## 1.10 INTENT OF DRAWINGS

- A. Electrical plan Drawings show only general location of equipment, devices, and raceway, unless specifically dimensioned. The CONTRACTOR shall be responsible for the proper routing of raceway, subject to the approval of the CITY.

PART 2 -- PRODUCTS

## 2.01 GENERAL

- A. Provide materials and equipment listed by UL wherever standards have been established by that agency. If a UL listing is not available, equipment shall have a label and listing from a nationally recognized testing laboratory (NRTL) acceptable to the authority having jurisdiction (AHJ) over the project location.
- B. Equipment Finish:
  - 1. Provide manufacturers' standard finish and color, except where specific color is indicated.
  - 2. If manufacturer has no standard color, provide equipment with ANSI No. 61, light gray color.

PART 3 -- EXECUTION

## 3.01 GENERAL

- A. Electrical Drawings show general locations of equipment, devices, and raceway, unless specifically dimensioned.
- B. Install work in accordance with NECA Standard of Installation, unless otherwise specified.

## 3.02 CHECKOUT AND STARTUP

- A. Startup:
  - 1. Demonstrate satisfactory operation of all electrical equipment. Participate with other trades in all startup activities.
  - 2. Assist the Instrumentation and Control (I&C) subcontractor in verifying signal integrity of all control and instrumentation signals.

- END OF SECTION -

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## SECTION 16050 - BASIC ELECTRICAL MATERIALS AND METHODS

PART 1 -- GENERAL

## 1.01 REFERENCES

A. The following is a list of standards that may be referenced in this section:

1. American National Standards Institute (ANSI):
  - a. C55.1, Standard for Shunt Power Capacitors.
  - b. C62.11, Standard for Metal-Oxide Surge Arrestors for AC Circuits.
  - c. Z55.1, Gray Finishes for Industrial Apparatus and Equipment.
2. American Society for Testing and Materials (ASTM):
  - a. A167, Standard Specification for Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip.
  - b. A240, Standard Specification for Heat-Resisting Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels.
  - c. A570, Standard Specification for Steel, Sheet, and Strip, Carbon, Hot-Rolled, Structural Quality.
3. Federal Specifications (FS):
  - a. W-C-596, Connector, Receptacle, Electrical.
  - b. W-S-896E, Switches: Toggle, Flush Mounted.
4. National Electrical Contractor's Association, Inc. (NECA): 5055, Standard of Installation.
5. National Electrical Manufacturers Association (NEMA):
  - a. 250, Enclosures for Electrical Equipment (1000 Volts Maximum).
  - b. AB 1, Molded Case Circuit Breakers and Molded Case Switches.
  - c. CP I, Shunt Capacitors.
  - d. ICS 2, Industrial Control Devices, Controllers, and Assemblies.
  - e. KS 1, Enclosed Switches.
  - f. LA I, Surge Arrestors.

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- g. PB 1, Panelboards
  - h. ST 20, Dry-Type Transformers for General Applications.
  - i. WD I, General Requirements for Wiring Devices.
6. National Fire Protection Association (NFPA): 70, National Electrical Code (NEC).
7. Underwriters Laboratories, Inc. (UL):
- a. 67, Standard for Panelboards.
  - b. 98, Standard for Enclosed and Dead-Front Switches.
  - c. 198C, Standard for Safety High-Interrupting-Capacity Fuses, Current-Limiting Types.
  - d. 198E, Standard for Class Q Fuses.
  - e. 486E, Standard for Equipment Wiring Terminals.
  - f. 489, Standard for Molded Case Circuit Breakers and Circuit Breaker Enclosures.
  - g. 508, Standard for Industrial Control Equipment.
  - h. 810, Standard for Capacitors.
  - i. 943, Standard for Ground-Fault Circuit Interrupters.
  - j. 1059, Standard for Terminal Blocks.
  - k. 1561, Standard for Dry-Type General-Purpose and Power Transformers.

## 1.02 SUBMITTALS

A. Shop Drawings:

- 1. Outlet, device, junction and pull boxes.
- 2. Wiring devices.
- 3. Hardware.
- 4. Terminal junction boxes.
- 5. Lighting and power distribution panelboards and circuit breaker data.
- 6. Circuit breakers
- 7. Fused and non-fused disconnect switches
- 8. Fuses.

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9. Lighting contactors.
10. Transformers.
11. Surge protection devices
12. All other miscellaneous material part of this project.
13. Relays; control indicating lights and switches.

B. Quality Control Submittals:

1. Test Report: Sound test certification for dry type power transformers (0 to 600-volt, primary).

1.03 QUALITY ASSURANCE

- A. UL Compliance: Materials manufactured within scope of Underwriters Laboratories shall conform to UL Standards and have an applied UL listing mark.
- B. Hazardous Areas: Materials and devices shall be specifically approved for hazardous areas of the class, division, and group shown and of a construction that will ensure safe performance when properly used and maintained.

1.04 SPARE PARTS

- A. Furnish, tag, and box for shipment and storage the following spare parts:
  1. Fuses, 0 to 600 Volts: Six of each type and each current rating installed.

PART 2 -- PRODUCTS

2.01 OUTLET AND DEVICE BOXES

A. Cast Metal:

1. Box: Cast ferrous metal.
2. Cover: Gasketed, weatherproof, cast ferrous metal, with stainless steel screws.
3. Hubs: Threaded.
4. Lugs (Cast Mounting) Manufacturer:
  - a. Crouse-Hinds; Type FS or FD.
  - b. Appleton; Type FS or FD.

B. Nonmetallic:

1. Box: PVC.

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2. Cover: PVC, weatherproof, with stainless steel screws.
3. Manufacturer: Carlon; Type FS or FD, with Type E98 or E96 covers.

## 2.02 JUNCTION AND PULL BOXES

- A. Outlet Boxes Used as Junction or Pull Box: As specified under Article OUTLET AND DEVICE BOXES.
- B. Large Sheet Steel Box: NEMA 250, Type 1.
  1. Box: Code-gauge, 304 stainless steel.
  2. Cover: Full access, hinge type.
  3. Machine Screws: 304 stainless steel.
- C. Large Stainless Steel Box: NEMA 250, Type 4X.
  1. Box: 14-gauge, ASTM A240, Type 316-stainless steel.
  2. Cover: Hinged with screws.
  3. Hardware and Machine Screws: ASTM A167, Type 316-stainless steel.
  4. Manufacturers:
    - a. Hoffman Engineering Co.
    - b. Robroy Industries.

## 2.03 WIRING DEVICES

- A. Switches:
  1. NEMA WD 1 and FS W-S-896E.
  2. Specification grade, totally enclosed, ac type, with quiet tumbler switches and screw terminals.
  3. Capable of controlling 100 percent tungsten filament and fluorescent lamp loads.
  4. Rating: 20 amps, 120/277 volts.
  5. Color: All Areas: Ivory
  6. Manufacturers:
    - a. Bryant.
    - b. Leviton.

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- c. Hubbell.
  - d. Pass and Seymour.
  - e. Arrow Hart.
- B. Receptacle, Single and Duplex: Not used on this project
- C. Receptacle, Ground Fault Circuit Interrupter: Duplex, specification grade, tripping at 5 mA.
- 1. Color: Ivory.
  - 2. Rating: 125 volts, NEMA WD 1, Configuration 5-20R, 20 amps, capable of interrupting 5,000 amps without damage.
  - 3. Size: For 2-inch by 4-inch outlet boxes.
  - 4. Standard Model: NEMA WD 1 with No. 12 AWG copper USE/RHH/RHW-XLPE insulated pigtails and provisions for testing.
  - 5. Feed-Through Model: NEMA WD 1, with No. 12 AWG copper USE/RHH/RHW-XLPE insulated pigtails and provisions for testing.
  - 6. Manufacturers:
    - a. Pass and Seymour.
    - b. Bryant.
    - c. Leviton.
    - d. Hubbell.
    - e. Arrow Hart.
- D. Receptacle, Special-Purpose:
- 1. Rating and number of poles as indicated or required for anticipated purpose.
  - 2. Matching plug with cord-grip features for each special-purpose receptacle.
- 2.04 DEVICE PLATES
- A. General: Sectional type plates not permitted.
- B. Metal:
- 1. Material: Specification grade, one-piece, 0.040-inch nominal thickness stainless steel.
  - 2. Finish: ASTM A167, Type 302/304, satin.

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3. Mounting Screw: Oval-head, finish matched to plate.

C. Cast Metal:

1. Material: Malleable ferrous metal, with gaskets.

2. Screw: Oval-head stainless steel.

D. Weatherproof:

1. For Receptacles: Gasketed, cast metal or stainless steel, with individual cap over each receptacle opening.

2. Mounting Screw: Stainless steel.

a. Cap Spring: Stainless steel.

b. Manufacturers:

1) General Electric.

2) Bryant.

3) Hubbell.

4) Sierra.

5) Pass and Seymour.

6) Crouse-Hinds; Type WLRD or WLRS.

7) Bell.

8) Arrow Hart.

3. For Switches: Gasketed, cast metal incorporating external operator for internal switch.

a. Mounting Screw: Stainless steel.

b. Manufacturers:

1) Crouse-Hinds; DS-181 or DS-185.

2) Appleton; FSK-LVTS or FSK-IVS.

2.15 NAMEPLATES

A. Material: Laminated plastic.

B. Attachment Screws: Stainless steel.

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- C. Color: White, engraved to a black core.
- D. Engraving:
  1. Pushbuttons/Selector Switches: Name of motor controlled on one, two, or three lines, as required.
  2. Panelboards: Panelboard designation, service voltage, and phases.
- E. Letter Height:
  1. Pushbuttons/Selector Switches: 1/8 inch.
  2. Panelboards: 1/4 inch.

PART 3 -- EXECUTION

## 3.01 OUTLET AND DEVICE BOXES

- A. Install suitable for conditions encountered at each outlet or device in the wiring or raceway system, sized to meet NFPA 70 requirements.
- B. Depth: Minimum 2 inches, unless otherwise required by structural conditions. Box extensions not permitted.
- C. Locations:
  1. Drawing locations are approximate.
  2. To avoid interference with mechanical equipment or structural features, relocate outlets as directed by CITY.
  3. Light Fixture: Install in symmetrical pattern according to layout unless otherwise shown.
- D. Mounting Height as shown on the Drawings
- E. Support boxes independently of conduit by attachment to building structure or structural member.
- F. Install bar hangers in frame construction, or fasten boxes directly with wood screws on wood, bolts and expansion shields on concrete or brick, toggle bolts on hollow masonry units, and machine screws threaded into steelwork.
- G. Install stainless steel mounting hardware in all areas.
- H. Boxes Supporting Fixtures: Provide means of attachment with adequate strength to support fixture.
- I. All receptacle boxes shall be cast malleable iron with corrosion resistant finish

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## 3.02 JUNCTION AND PULL BOXES

- A. Install where shown and where necessary to terminate, tap-off, or redirect multiple conduit runs.
- B. Install pull boxes where necessary in raceway system to facilitate conductor installation.
- C. Install in conduit runs at least every 150 feet or after the equivalent of three right angle bends.
- D. All junction boxes shall be 304 stainless steel.
- E. Installed boxes shall be readily accessible.
- F. Install plumb and level.
- G. Support boxes independently of conduit by attachment to building structure or structural member.
- H. Install bar hangers in frame construction, or fasten boxes directly with wood screws on wood, bolts and expansion shields on concrete or brick, toggle bolts on hollow masonry units, and machine screws or welded threaded studs on steelwork.
- I. Mounting Hardware: All Areas: Stainless steel.

## 3.04 WIRING DEVICES

- A. Switches shall be installed as shown on the Drawings
- B. Receptacles:
  - 1. Install with grounding slot down except where horizontal mounting is shown, in which case install with neutral slot up.
  - 2. Ground receptacles to boxes with grounding wire
  - 3. Weatherproof Receptacles:
    - a. Install in malleable iron metal box.
    - b. Install such that hinge for protective cover is above receptacle opening.
  - 4. Ground Fault Interrupter: Install feed-through model at locations where ground fault protection is specified for "downstream" conventional receptacles.
  - 5. Special-Purpose Receptacles: Install in accordance with manufacturer's instructions.

## 3.05 DEVICE PLATES

- A. Securely fasten to wiring device; ensure a tight fit to the box.

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- B. Surface Mounted: Plate shall not extend beyond sides of box unless plates have no sharp corners or edges.
- C. Types (Unless Otherwise Shown):
1. All: Stainless Steel.
  2. Exterior: Weatherproof Full time use.
- 3.07 TERMINAL JUNCTION BOX
- A. Install in accordance with Paragraph JUNCTION AND PULL BOXES.
  - B. Label each block and terminal with permanently attached, non-destructible tag.
  - C. Do not install on finished outdoor surfaces.
- 3.10 SUPPORT AND FRAMING CHANNEL
- A. Install where required for mounting and supporting electrical equipment and raceway systems.

- END OF SECTION -

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## SECTION 16110 - RACEWAYS

PART 1 – GENERAL

## 1.01 REFERENCES

- A. The following is a list of standards that may be referenced in this section:
1. American Association of State Highway and Transportation Officials (AASHTO):  
Division I, Standard Specifications for Highway Bridges, Fourteenth Edition.
  2. American National Standards Institute (ANSI):
    - a. C80.1, Rigid Steel Conduit-Zinc Coated.
    - b. CS0.5, Rigid Aluminum Conduit.
  3. American Society for Testing and Materials (ASTM):
    - a. A123 EI, Standard Specification for Zinc-Coated (Galvanized) Coatings on Iron and Steel Products.
    - b. C857, Standard Practice for Minimum Structural Design Loading for Underground Precast Concrete Utility Structures.
  4. National Electrical Contractor's Association, Inc. (NECA): 5055, Standard of Installation.
  5. National Electrical Manufacturers Association (NEMA):
  6. National Fire Protection Association (NFPA): 70, National Electrical Code. (NEC)
  7. Underwriters Laboratories, Inc. (UL):
    - a. 1, Standard for Safety Flexible Metal Conduit.
    - b. 6, Standard for Safety Rigid Metal Conduit.
    - c. 360, Standard for Safety Liquid-Tight Flexible Steel Conduit.
    - d. 514B, Standard for Safety Fittings for Conduit and Outlet Boxes.
    - e. 514C, Standard for Safety Nonmetallic Outlet Boxes, Flush-Device Boxes, and Covers.
    - f. 651, Standard for Safety Schedule 40 and 80 PVC Conduit.
    - i. 870, Standard for Safety Wireways, Auxiliary Gutters, and Associated Fittings.
    - k. 1660, Standard for Safety Liquid-Tight Flexible Nonmetallic Conduit.

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## 1.02 SUBMITTALS

A. Shop Drawings:

## 1. Manufacturer's Literature:

- a. Rigid galvanized steel conduit.
- b. Rigid aluminum conduit.
- c. PVC Schedule 80 conduit.
- d. Flexible metal, liquid-tight conduit.
- e. Conduit fittings.
- f. Wireways.

## 4. Conduit Layout:

- a. Plan and section type, showing arrangement and location of conduit and duct bank required for:
  - 1) Low and medium voltage feeder and branch circuits.
  - 2) Instrumentation and control systems.
  - 3) Communications systems.
  - 4) Empty conduit for future use.

## 1.03 UL COMPLIANCE

- A. Materials manufactured within scope of Underwriters Laboratories shall conform to UL Standards and have an applied UL listing mark.

PART 2 -- PRODUCTS

## 2.01 CONDUIT AND TUBING

A. Rigid Galvanized Steel Conduit (RGS):

1. Meet requirements of ANSI C80.1 and UL6.
2. Material: Hot-dip galvanized, with chromated protective layer.

B. Rigid Aluminum Conduit:

1. Meet requirements of ANSI C80.5 and UL 6.
2. Material: Type 6063, copper-free aluminum alloy.

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C. PVC Schedule 80 Conduit:

1. Meet requirements of NEMA TC 2 and UL 651.
2. UL listed for concrete encasement, underground direct burial, concealed or direct sunlight exposure, and 90 degrees C insulated conductors.

D. Flexible Metal, Liquid-Tight Conduit:

1. UL 360 listed for 105 degrees C insulated conductors.
2. Material: Galvanized steel, with an extruded PVC jacket.

## 2.02 FITTINGS

A. Rigid Galvanized Steel Conduit:

## 1. General:

- a. Meet requirements of UL 514B.
- b. Type: Threaded, galvanized. Set screw fittings not permitted.

## 2. Bushing:

- a. Material: Malleable iron with integral insulated throat, rated for 150 degrees C.
- b. Manufacturers:

- 1) Thomas & Betts; Type BIM.
- 2) O.Z./Gedney; Type HB.

## 3. Grounding Bushing:

- a. Material: Malleable iron with integral insulated throat rated for 150 degrees C, with solderless lugs.

## b. Manufacturers:

- 1) Appleton; Series GIB.
- 2) O.Z. Gedney; Type HBLG.

## 4. Conduit Hub:

- a. Material: Malleable iron with insulated throat.

## b. Manufacturers:

- 1) O.Z. Gedney; Series CH.

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- 2) T & B; Series 370.
5. Conduit Bodies:
  - a. Material: Malleable iron, sized as required by NFPA 70.
  - b. Manufacturers (For Normal Conditions):
    - 1) Appleton; Form 35 threaded Unilets.
    - 2) Crouse-Hinds; Form 7 or 8 threaded condulets.
    - 3) Killark; Series O Electrolets.
6. Couplings: As supplied by conduit manufacturer.
7. Conduit Sealing Fitting Manufacturers:
  - a. Appleton; Type EYF, EYM, or ESU.
  - b. Crouse-Hinds; Type EYS or EZS.
  - c. Killark; Type EY or EYS.
8. Drain Seal Manufacturers:
  - a. Appleton; Type SF.
  - b. Crouse-Hinds; Type EYD or EZD.
9. Drain/Breather Fitting Manufacturers:
  - a. Appleton; Type ECDB.
  - b. Crouse-Hinds; ECD.
10. Expansion Fitting Manufacturers:
  - a. Deflection/Expansion Movement:
    - 1) Appleton; Type DF.
    - 2) Crouse-Hinds; Type XD.
  - b. Expansion Movement Only:
    - 1) Appleton; Type XJ.
    - 2) Crouse-Hinds; Type XJ.
11. Cable Sealing Fittings:

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- a. To form watertight non-slip cord or cable connection to conduit.
  - b. For Conductors With OD of 1/2 Inch or Less: Neoprene bushing at connector entry.
  - c. Manufacturers:
    - 1) Crouse-Hinds; CGBS.
    - 2) Appleton; CG-S.
- B. Rigid Aluminum Conduit:
1. General:
    - a. Meet requirements of UL 514B.
    - b. Type: Threaded, copper-free. Set screw fittings not permitted.
  2. Insulated Bushing:
    - a. Material: Cast aluminum, with integral insulated throat, rated for 150 degrees C.
    - b. Manufacturer: O.Z. Gedney; Type AB.
  3. Grounding Bushing:
    - a. Material: Cast aluminum with integral insulated throat, rated for 150 degrees, with solderless lugs.
    - b. Manufacturer: O.Z. Gedney; Type ABLG.
  4. Conduit Hub:
    - a. Material: Cast aluminum, with insulated throat.
    - b. Manufacturers:
      - 1) O.Z. Gedney; Type CHA.
      - 2) T & B; Series 370AL.
  5. Conduit Bodies:
    - a. Manufacturers (For Normal Conditions):
      - 1) Appleton; Form 85 threaded Unilets.
      - 2) Crouse-Hinds; Mark 9 or Form 7-SA threaded condulets.
      - 3) Killark; Series O Electrolets.

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- b. Manufacturers (For Hazardous Locations):
    - 1) Appleton.
    - 2) Crouse-Hinds.
    - 3) Killark.
  - 6. Couplings: As supplied by conduit manufacturer.
  - 7. Conduit Sealing Fitting Manufacturers:
    - a. Appleton; Type EYF-AL or EYM-AL.
    - b. Crouse-Hinds; Type EYS-SA or EZS-SA.
    - c. Killark; Type EY or EYS.
  - 8. Drain Seal Manufacturers:
    - a. Appleton; Type EYDM-A.
    - b. Crouse-Hinds; Type EYD-SA or EZD-SA.
  - 9. Drain/Breather Fitting Manufacturers:
    - a. Appleton; Type ECDB.
    - b. Crouse-Hinds; ECD.
  - 10. Expansion Fitting Manufacturers:
    - a. Deflection/Expansion Movement: Steel City; Type DF-A.
    - b. Expansion Movement Only: Steel City; Type AF-A.
  - 11. Cable Sealing Fittings: To form watertight non-slip cord or cable connection to conduit.
    - a. Bushing: Neoprene at connector entry.
    - b. Manufacturer: Appleton CG-S.
- C. PVC Conduit and Tubing:
- 1. Meet requirements of NEMA TC-3.
  - 2. Type: PVC, slip-on.

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D. Flexible Metal, Liquid-Tight Conduit:

1. Metal insulated throat connectors with integral nylon or plastic bushing rated for 105 degrees C.
2. Insulated throat and sealing O-rings.
3. Long design type extending outside of box or other device at least 2 inches.
4. Manufacturer: T & B; Series 5300.

E. Watertight Entrance Seal Device:

1. New Construction:
  - a. Material: Oversized sleeve, malleable iron body with sealing ring, pressure ring, grommet seal, and pressure clamp.
  - b. Manufacturer: O.Z./Gedney; Type FSK or WSK, as required.
2. Cored-Hole Application:
  - a. Material: Assembled dual pressure disks, neoprene sealing ring, and membrane clamp.
  - b. Manufacturer: O.Z./Gedney; Series CSM.

## 2.03 ACCESSORIES

A. Identification Devices:

1. Raceway Tags:
  - a. Material: Permanent, nylon.
  - b. Shape: Round.
  - c. Raceway Designation: Pressure stamped, embossed, or engraved.
  - d. Tags relying on adhesives or taped-on markers not permitted.
2. Warning Tape:
  - a. Material: Polyethylene, 4-mil gauge.
  - b. Color: Red.
  - c. Width: Minimum 6-inch.
  - d. Designation: Warning on tape that electric circuit is located below tape.
  - e. Manufacturers:

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- 1) Blackburn, Type RT.
  - 2) Griffolyn Co.
3. Buried Raceway Marker:
- a. Material: Sheet bronze, consisting of double-ended arrows, straight for straight runs and bent at locations where change direction runs.
  - b. Designation: Incise to depth of 3/32 inch, ELECTRIC CABLES. in letters 1/4-inch high.
  - c. Minimum Dimension: 1/4-inch thick, 10 inches long, and 3/4-inch wide.
- B. Raceway Coating:
1. Material: Bitumastic or plastic tape coating.
  2. Manufacturers:
    - a. Koppers bitumastic; No. 505.
    - b. Scotchwrap; No. 51, plastic tape.
- C. Wraparound Duct Band:
1. Material: Heat-shrinkable, cross-linked polyolefin, pre-coated with hot-melt adhesive.
  2. Manufacturer: Raychem; Type TWDB.

PART 3 -- EXECUTION

## 3.01 GENERAL

- A. Conduit and Tubing sizes shown are based on the use of copper conductors. Reference Section 16120, CONDUCTORS, concerning conduit sizing for aluminum conductors.
- B. All installed Work shall comply with NECA 5055.
- C. Crushed or deformed raceways not permitted.
- D. Maintain raceway entirely free of obstructions and moisture.
- E. Immediately after installation, plug or cap raceway ends with watertight and dust-tight seals until time for pulling in conductors.
- F. Aluminum Conduit: Do not install in direct contact with concrete.
- G. Sealing Fittings: Provide drain seal in vertical raceways where condensate may collect above sealing fitting.

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- H. Avoid moisture traps where possible. When unavoidable in exposed conduit runs, provide junction box and drain fitting at conduit low point.
- I. Group raceways installed in same area.
- J. Proximity to Heated Piping: Install raceways minimum 12 inches from parallel runs.
- K. Follow structural surface contours when installing exposed raceways. Avoid obstruction of passageways.
- L. Run exposed raceways parallel or perpendicular to walls, structural members, or intersections of vertical planes.
- M. Install watertight fittings in all locations.
- N. Paint threads, before assembly of fittings, of galvanized conduit or IMC installed in exposed or damp locations with zinc-rich paint or liquid galvanizing compound.
- O. All metal conduit to be reamed, burrs removed, and cleaned before installation of conductors, wires, or cables.
- P. Do not install raceways in concrete equipment pads, foundations, or beams.
- Q. Install concealed, embedded, and buried raceways so that they emerge at right angles to surface and have no curved portion exposed.

## 3.02 CONDUIT APPLICATION

- A. Diameter: Minimum 1 inch.
- B. Underground Buried: PVC Schedule 80.
- C. All Other Areas: GRS

## 3.03 CONNECTIONS

- A. For motors, wall or ceiling mounted fans and unit heaters, dry type transformers, electrically operated valves, instrumentation, and other equipment where flexible connection is required to minimize vibration:
  1. Conduit Size 4 Inches or Less: Flexible metal, liquid-tight conduit.
  2. Length: 18-inch minimum, 60-inch maximum, of sufficient length to allow movement or adjustment of equipment.
- B. Lighting Fixtures: Flexible metallic liquid-tight conduit.
- D. Transition From Underground to Exposed: PVC Schd. 80 conduit.

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## 3.05 PENETRATIONS

- A. Make at right angles, unless otherwise shown.
- B. Notching or penetration of structural members, including footings and beams, not permitted.
- C. Fire-Rated Walls, Floors, or Ceilings: Fire-stop openings around penetrations to maintain fire-resistance rating.
- D. Apply single layer of wraparound duct band to all metallic conduit in contact with concrete floor slabs to a point 2 inches above concrete surface.
- E. Concrete Walls, Floors, or Ceilings (Aboveground): Provide nonshrink grout dry-pack, or use watertight seal device.
- F. Entering Structures:
  - 1. General: Seal raceway at the first box or outlet with minimum 2 inches thick expandable plastic compound to prevent the entrance of gases or liquids from one area to another.
  - 2. Concrete Roof or Membrane Waterproofed Wall or Floor:
    - a. Provide a watertight seal.
    - b. Without Concrete Encasement: Install watertight entrance seal device on each side.
    - c. With Concrete Encasement: Install watertight entrance seal device on the accessible side.
    - d. Securely anchor malleable iron body of watertight entrance seal device into construction with one or more integral flanges.
    - e. Secure membrane waterproofing to watertight entrance seal device in a permanent, watertight manner.
  - 3. Corrosive-Sensitive Areas:
    - a. Seal all conduits passing through chlorine and ammonia room walls.
    - b. Seal all conduit entering equipment panel boards and field panels containing electronic equipment.
    - c. Seal penetration with silicone type sealant as specified in Section 07270, FIRE STOPPING.

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## 3.06 SUPPORT

- A. Support from structural members only, at intervals not exceeding NFPA 70 requirements, and in any case not exceeding 10 feet. Do not support from piping, pipe supports, or other raceways.
- B. Multiple Adjacent Raceways: Provide ceiling trapeze. For trapeze-supported conduit, allow 40 percent extra space for future conduit.
- C. Provide and attach wall brackets, strap hangers, or ceiling trapeze as follows:
  - 1. Wood: Wood screws.
  - 2. Hollow Masonry Units: Toggle bolts.
  - 3. Concrete or Brick: Expansion shields, or threaded studs driven in by powder charge, with lock washers and nuts.
  - 4. Steelwork: Machine screws.
- D. Nails or wooden plugs inserted in concrete or masonry for attaching raceway not permitted. Do not weld raceways or pipe straps to steel structures. Do not use wire in lieu of straps or hangers.

## 3.07 BENDS

- A. Install concealed raceways with a minimum of bends in the shortest practical distance.
- B. Make bends and offsets of longest practical radius.
- C. Install with symmetrical bends or cast metal fittings.
- D. Avoid field-made bends and offsets, but where necessary, make with acceptable hickey or bending machine. Do not heat metal raceways to facilitate bending.
- E. Make bends in parallel or banked runs from same center or centerline with same radius so that bends are parallel.
- F. Factory elbows may be installed in parallel or banked raceways if there is change in plane of run, and raceways are same size.
- G. PVC Conduit:
  - 1. Bends 30-Degree and Larger: Provide factory-made elbows.
  - 2. 90-Degree Bends: Provide rigid steel elbows.
  - 3. Use manufacturer's recommended method for forming smaller bends.
- H. Flexible Conduit: Do not make bends that exceed allowable conductor bending radius of cable to be installed or that significantly restricts conduit flexibility.

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## 3.08 EXPANSION/DEFLECTION FITTINGS

- A. Provide on all raceways at all structural expansion joints, and in long tangential runs.
- B. Provide expansion/deflection joints for 50 degrees F maximum temperature variation.
- C. Install in accordance with manufacturer's instructions.

## 3.09 PVC CONDUIT

A. Solvent Welding:

1. Provide manufacturer recommended solvent; apply to all joints.
2. Install such that joint is watertight.

B. Adapters:

1. PVC to Metallic Fittings: PVC terminal type.
2. PVC to Rigid Metal Conduit or IMC: PVC female adapter.

C. Beveled-End Conduit: Bevel the un-belled end of the joint prior to joining.

## 3.10 TERMINATION AT ENCLOSURES

## A. Cast Metal Enclosure: Provide manufacturer's pre-molded insulating sleeve inside metallic conduit terminating in threaded hubs.

B. Sheet Metal Boxes, Cabinets, and Enclosures:

## 1. Rigid Galvanized Conduit:

- a. Provide one lock nut each on inside and outside of enclosure.
  - b. Install grounding bushing.
  - c. Provide bonding jumper from grounding bushing to equipment ground bus or ground pad; if neither ground bus nor pad exists, connect jumper to lag bolt attached to metal enclosure.
  - d. Install insulated bushing on ends of conduit where grounding is not required.
  - e. Provide insulated throat when conduit terminates in sheet metal boxes having threaded hubs.
2. Electric Metallic Tubing: Provide gland compression, insulated connectors.
  3. Flexible Metal Conduit: Provide two screw type, insulated, malleable iron connectors.
  4. Flexible, Nonmetallic Conduit: Provide nonmetallic, liquid-tight strain relief connectors.

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5. PVC-Coated Rigid Galvanized Steel Conduit: Provide PVC-coated, liquid-tight, metallic connector.

6. PVC Schedule 40 Conduit: Provide PVC terminal adapter with lock nut.

C. Motor Control Center, Switchboard, Switchgear, and Free-Standing Enclosures: Terminate conduit entering bottom with grounding bushing; provide a grounding jumper extending to equipment ground bus or grounding pad.

### 3.11 UNDERGROUND RACEWAYS

A. Grade: Maintain minimum grade of 4 inches in 100 feet, either from one manhole, handhole, or pull box to the next, or from a high point between them, depending on surface contour.

B. Cover: Maintain minimum 2-foot cover above conduit and concrete encasement, unless otherwise shown.

C. Make routing changes as necessary to avoid obstructions or conflicts.

D. Couplings: In multiple conduit runs, stagger so that couplings in adjacent runs are not in same transverse line.

E. Union type fittings not permitted.

F. Spacers:

1. Provide preformed, nonmetallic spacers, designed for such purpose, to secure and separate parallel conduit runs in a trench or concrete encasement.

2. Install at intervals not greater than that specified in NFPA 70 for support of the type conduit used, but in no case greater than 10 feet.

G. Support conduit so as to prevent bending or displacement during backfilling or concrete placement.

H. Installation with Other Piping Systems:

1. Crossings: Maintain minimum 12-inch vertical separation.

2. Parallel Runs: Maintain minimum 12-inch separation.

3. Installation over valves or couplings not permitted.

I. Metallic Raceway Coating: At couplings and joints and along entire length, apply wraparound duct band with one-half tape width overlap to obtain two complete layers.

J. Backfill:

1. As specified in Section 02222, EXCAVATION AND BACKFILL.FOR UTILITIES

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2. Do not backfill until inspected by CITY.

### 3.14 EMPTY RACEWAYS

- A. Provide permanent, removable cap over each end.
- B. Provide PVC plug with pull tab for underground raceways with end bells.
- C. Provide nylon pull cord.
- D. Identify, as specified in Article IDENTIFICATION DEVICES, with waterproof tags attached to pull cord at each end, and at intermediate pull point.

### 3.15 IDENTIFICATION DEVICES

#### A. Raceway Tags:

- 1. Identify origin and destination.
- 2. Install at each terminus, near midpoint, and at minimum intervals of every 50 feet of exposed Raceway, whether in ceiling space or surface mounted.
- 3. Provide nylon strap for attachment.

B. Warning Tape: Install approximately 12 inches above underground or concrete-encased raceways. Align parallel to, and within 12 inches of, centerline of runs.

#### C. Buried Raceway Markers:

- 1. Install at grade to indicate direction of underground raceways.
- 2. Install at all bends and at intervals not exceeding 100 feet in straight runs.
- 3. Embed and secure to top of concrete base, sized 14 inches long, 6 inches wide, and 8 inches deep; top set flush with finished grade.

### 3.17 PROTECTION OF INSTALLED WORK

- A. Protect products from effects of moisture, corrosion, and physical damage during construction.
- B. Provide and maintain manufactured watertight and dust-tight seals over all conduit openings during construction.
- C. Touch up painted conduit threads after assembly to cover nicks or scars.

- END OF SECTION -

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## SECTION 16120 – CONDUCTORS

PART 1 -- GENERAL

## 1.01 SUBMITTALS

## A. Shop Drawings:

1. Wire and cable descriptive product information.
2. Wire and cable accessories descriptive product information.

## B. Quality Control Submittals:

1. Certified Factory Test Report for conductors 600 volts and below.

## 1.02 UL COMPLIANCE

- A. Materials manufactured within scope of Underwriters Laboratories shall conform to UL Standards and have an applied UL listing mark.

PART 2 -- PRODUCTS

## 2.01 CONDUCTORS 600 VOLTS AND BELOW

- A. Conform to applicable requirements of NEMA WC 3, WC 5, and WC 7.

## B. Conductor Type:

1. 120- and 277-Volt Lighting, No. 10 AWG and Smaller: Stranded copper.
2. 120-Volt Receptacle Circuits, No. 10 AWG and Smaller: Stranded copper.
3. All Other Circuits: Stranded copper.

- C. Insulation Type Dry Location THHN/THWN. Wet Location or underground: XHHW.

## D. Flexible Cords and Cables:

1. Type SOW-A50 with ethylene propylene rubber insulation in accordance with UL 62.
2. Conform to physical and minimum thickness requirements of NEMA WC 8.

## 2.02 600-VOLT RATED CABLE

A. General:

1. Permanently and legibly marked with manufacturer's name, maximum working voltage for which cable was tested, type of cable, and UL listing mark.

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2. Suitable for installation in open air, in cable trays, or conduit.
  3. Minimum Temperature Rating: 90 degrees C dry locations, 75 degrees C wet locations.
  4. Overall Outer Jacket: PVC, flame-retardant, sunlight- and oil-resistant.
- B. Wire and Connectors:
1. Cable shall be rated for 600 volts and shall meet the requirements below:
  2. Conductors shall be stranded.
  3. All wire shall be brought to the job in unbroken packages and shall bear the data of manufacturing; not older than 12 months.
  4. Type of wire shall be XHHW or THHN, rated 75 degrees C suitable for wet locations except where required otherwise by the drawings.
  5. No wire smaller than No. 12 gauge shall be used unless specifically indicated.
  6. Conductor metal shall be copper.
  7. All conductors shall be megger tested after installation and insulation must be in compliance with the Insulated Power Cable Engineers Association Minimum Values of Insulation Resistance.
- D. Multiconductor Power Cable:
1. Conductors:
    - a. Class B stranded, coated copper.
    - b. Insulation: Chemically crosslinked ethylene-propylene with Hypalon jacket.
    - c. UL 1581 listed as Type EPR, rated VW-1.
    - d. Color Code: Conductors, size No. 8 AWG and smaller, colored conductors, NEMA WC5 Method 1, color 5 per Article POWER CONDUCTOR COLOR CODING. Conductors, size No. 6 AWG and larger, NEMA WC5, Method 4.
  2. Cable shall pass the ICEA T-29-520 210,000 Btu/hr Vertical Tray Flame Test.

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3. Cable Sizes:

Conductor Size	Minimum Ground Wire Size	No. of Conductors	Max. Outside Diameter (Inches)	Nominal Jacket Thickness (Mils)
12	12	2	0.42	45
		3	0.45	45
		4	0.49	45
10	10	2	0.54	60
		3	0.58	60
		4	0.63	60
8	10	3	0.66	60
		4	0.72	

4. Manufacturers:

- a. Okonite Co.
- b. Rome Cable.
- c. Southwire

E. No. 16 AWG, Twisted, Shielded Pair, Instrumentation Cable: Single pair, designed for noise rejection for process control, computer, or data log applications meeting NEMA WC 55 requirements.

- 1. Outer Jacket: 45-mil nominal thickness.
- 2. Individual Pair Shield: 1.35-mil, double-faced aluminum/synthetic polymer overlapped to provide 100 percent coverage.
- 3. Dimension: 0.31-inch nominal OD.
- 4. Conductors:
  - a. Bare soft annealed copper, Class B, seven-strand concentric, meeting requirements of ASTM B8
  - b. 20 AWG, seven-strand tinned copper drain wire.
  - c. Insulation: 15-mil nominal PVC.
  - d. Jacket: 4-mil nominal nylon.
  - e. Color Code: Pair conductors black and red.
- 5. Manufacturers:
  - a. Okonite Co.
  - b. Alpha Wire Corp.
  - c. Belden.

2.03 GROUNDING CONDUCTORS

16120

43190-025 S 16120 / 9-21-16

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- A. Equipment: Stranded copper with green, Type USE/RHH/RHW-XLPE or THHN/THWN, insulation.
  - B. Direct Buried: Bare stranded copper.
- 2.04 ACCESSORIES FOR CONDUCTORS 600 VOLTS AND BELOW
- A. Tape:
    - 1. General Purpose, Flame Retardant: 7-mil, vinyl plastic, Scotch Brand 33, rated for 90 degrees C minimum, meeting requirements of UL 510.
    - 2. Flame Retardant, Cold and Weather Resistant: 8.5-mil, vinyl plastic, Scotch Brand 88.
    - 3. Arcs and Fireproofing:
      - a. 30-mil, elastomer
      - b. Manufacturers and Products:
        - 1) Scotch; Brand 77, with Scotch Brand 69 glass cloth tape binder.
        - 2) Plytnout; Plyarc 30, with Plymount Plyglas glass cloth tape binder.
  - B. Identification Devices:
    - 1. Sleeve: Permanent, PVC, yellow or white, with legible machine-printed black markings.
    - 2. Marker Plate: Nylon, with legible designations permanently hot stamped on plate.
    - 3. Grounding Conductor: Permanent green heat-shrink sleeve, 2-inch minimum.
  - C. Connectors and Terminations:
    - 1. Nylon, Self-Insulated Crimp Connectors:
      - a. Manufacturers and Products:
        - 1) Thomas & Betts; Sta-Kon.
        - 2) Burndy; Insulink.
        - 3) ILSCO.
    - 2. Nylon, Self-Insulated, Crimp Locking-Fork, Torque-Type Terminator:
      - a. Manufacturers and Products:
        - 1) Thomas & Betts; Sta-Kon.

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2) Burndy; Insulink.

3) ILSCO.

D. Cable Lugs:

1. In accordance with NEMA CC I.
2. Rated 600 volts of same material as conductor metal.
3. Insulated, Locking-Fork, Compression Lugs:
  - a. Manufacturers and Products:
    - 1) Thomas & Betts; Sta-Kon.
    - 2) ILSCO; ILSCONS.
4. Uninsulated Crimp Connectors and Terminators:
  - a. Manufacturers and Products:
    - 1) Square D; Versitide.
    - 2) Thomas & Betts; Color-Keyed.
    - 3) ILSCO.
5. Un-insulated, Bolted, Two-Way Connectors and Terminators:
  - a. Manufacturers and Products:
    - 1) Thomas & Betts; Locktite.
    - 2) Burndy; Quiklug.
    - 3) ILSCO.

E. Cable Ties: Nylon, adjustable, self-locking, and reusable.

1. Manufacturers and Product: Thomas & Betts; TY-RAP.

F. Heat Shrinkable Insulation: Thermally stabilized, crosslinked polyolefin.

1. Manufacturers and Product: Thomas & Betts; SHRINK-KON.

2.05 PULLING COMPOUND

- A. Nontoxic, noncorrosive, noncombustible, nonflammable, wax-based lubricant; UL listed.
- B. Suitable for rubber, neoprene, PVC, polyethylene, hypalon, CPE, and lead-covered wire and cable.

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- C. Suitable for zinc-coated steel, aluminum, PVC, bituminized fiber, and fiberglass raceways.
- D. Manufacturers and Products:
  - 1. Ideal Co.; Yellow 77.
  - 2. Polywater, Inc.
  - 3. Cable Grip Co.
- 2.06 WARNING TAPE
  - A. As specified in Section 16110, RACEWAYS.
- 2.07 SOURCE QUALITY CONTROL
  - A. Conductors 600-Volts and Below: Test in accordance with UL 44 and 854 Standards.

PART 3 -- EXECUTION

## 3.01 GENERAL

- A. Conductor installation to be in accordance with NECA 5055.
- B. Conductor and cable sizing shown is based on copper conductors, unless noted otherwise.
- C. Do not exceed cable manufacturer's recommendations for maximum pulling tensions and minimum bending radii.
- D. Tighten screws and terminal bolts in accordance with UL 486A for copper conductors.
- E. Cable Lugs: Provide with correct number of holes, bolt size, and center-to-center spacing as required by equipment terminals.
- F. Bundling: Where single conductors and cables in manholes, hand holes, vaults, and other indicated locations are not wrapped together by some other means, bundle conductors from each conduit throughout their exposed length with cable ties placed at intervals not exceeding 18 inches on center.
- G. Ream, remove burrs, and clear interior of installed conduit before pulling wires or cables.
- H. Concrete-Encased Raceway Installation: Prior to installation of conductors, pull through each raceway a mandrel approximately 1/4-inch smaller than raceway inside diameter.

## 3.02 POWER CONDUCTOR COLOR CODING

- A. Conductors 600 Volts and Below:

16120

43190-025 S 16120 / 9-21-16

6

Conductors  
 FT 18-015  
 Ft Laud - 2nd Ave W P Restore  
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1. No. 6 AWG and Larger: Apply general purpose, flame retardant tape at each end, and at accessible locations wrapped at least six full overlapping turns, covering an area 1-1/2 to 2 inches wide.
2. No. 8 AWG and Smaller: Provide colored conductors.
3. Colors:

System	Conductor	Color
All Systems	Equipment Grounding	Green
240/120 Volts Single-Phase, Three-Wire	Grounded Neutral One Hot Leg Other Hot Leg	White Black Red
208Y/120 Volts Three-Phase, Four-Wire	Grounded Neutral Phase A Phase B Phase C	White Black Red Blue
240/120 Volts Three-Phase, Four-Wire Delta, Center Tap Ground on Single-Phase	Grounded Neutral Phase A High (wild) Leg Phase C	White Black Orange Blue
480Y/277 Volts Three-Phase, Four-Wire	Grounded Neutral Phase A Phase B Phase C	Gray Brown Orange Yellow
NOTE: Phase A, B, C implies direction of positive phase rotation		

4. Tracer: Outer covering of white with an identifiable colored strip other than green in accordance with NFPA 70.

3.03 CIRCUIT IDENTIFICATION

- A. Circuits Appearing in Circuit Schedules: identify power, instrumentation, and control conductor circuits, using circuit schedule designations, at each termination and in accessible locations such as manholes, hand holes, panels, switchboards, motor control centers, pull boxes, and terminal boxes.
- B. Circuits Not Appearing in Circuit Schedules:
  1. Assign circuit name based on device or equipment at load end of circuit.
  2. Where this would result in same name being assigned to more than one circuit, add number or letter to each otherwise identical circuit name to make it unique.
- C. Method:
  1. Conductors No. 3 AWG and Smaller: Identify with sleeves.
  2. Cables, and Conductors No. 2 AWG and Larger:

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- a. Identify with marker plates.
  - b. Attach marker plates with nylon tie cord.
3. Taped-on markers or tags relying on adhesives not permitted.
- 3.04 CONDUCTORS 600 VOLTS AND BELOW
- A. Install 10 AWG or 12 AWG conductors for branch circuit power wiring in lighting and receptacle circuits.
- B. Do not splice incoming service conductors and branch power distribution conductors No. 6 AWG and larger unless specifically indicated or approved by CITY.
- C. Connections and Terminations:
1. Install wire nuts only on solid conductors.
  2. Install nylon self-insulated crimp connectors and terminators for instrumentation, control, and power circuit conductors No. 6 AWG and smaller.
  3. Install un-insulated crimp connectors and terminators for instrumentation, control, and power circuit conductors No. 4 AWG through No. 2/0 AWG.
  4. Install un-insulated, bolted, two-way connectors and terminators for power circuit conductors No. 4/0 AWG and larger.
  5. Install un-insulated bolted, two-way connectors for motor circuit conductors No. 12 and larger.
  6. Tape insulates all un-insulated connections.
  7. Place no more than one conductor in any single-barrel pressure connection.
  8. Install crimp connectors with tools approved by connector manufacturer.
  9. Install terminals and connectors acceptable for type of material used.
  10. Compression Lugs
    - a. Attach with a tool specifically designed for purpose.
    - b. Tool shall provide complete controlled crimp and shall not release until crimp is complete.
    - c. Do not use plier-type crimpers.
- D. Do not use soldered mechanical joints.
- E. Splices and Terminations:
1. Indoors: Use general purpose, flame retardant tape.

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2. Outdoors: Use flame retardant, cold- and weather-resistant tape.
- F. Cap spare conductors and conductors with UL listed end caps.
- G. Cabinets, Panels, and Motor Control Centers:
1. Remove surplus wire, bridle and secure.
  2. Where conductors pass through openings or over edges in sheet metal, remove burrs, chamfer edges, and install bushings and protective strips of insulating material to protect the conductors.
- H. Control and Instrumentation Wiring:
1. Where terminals provided will accept such lugs, terminate control and instrumentation wiring, except solid thermocouple leads, with insulated, locking-fork compression lugs.
  2. Terminate with methods consistent with terminals provided, and in accordance with terminal manufacturer's instructions.
  3. Locate splices in readily accessible cabinets or junction boxes using terminal strips.
  4. Cable Protection:
    - a. Under Infinite Access Floors: May be installed without bundling.
    - b. All Other Areas: Install individual wires, pairs, or triads in flex conduit under the floor or grouped into bundles at least 1/2-inch in diameter.
    - c. Maintain integrity of shielding of instrumentation cables.
    - d. Ensure grounds do not occur because of damage to jacket over the shield.
- I. Extra Conductor Length: For conductors to be connected by others, install minimum 6 feet of extra conductor in freestanding panels and minimum 2 feet in other assemblies.
- 3.05 MOUNTING CONDUIT TO TANK
- A. The CONTRACTOR shall design and provide "Z" shaped carbon steel mounting brackets to attach stainless steel unistrut to the tank. The bottom leg shall be continuously welded to the tank or support. The top leg shall have a drilled hole for bolting the unistrut to the mounting bracket. When mounting to railings and ladders, the location of the brackets, unistrut and conduits shall not interfere with placement of hands or feet. The minimum thickness of the bracket shall be 3/16-inch. The minimum width of the bracket shall be 1-inch.

- END OF SECTION -

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## SECTION 16450 - GROUNDING

PART 1 -- GENERAL

## 1.01 REFERENCES

A. The following is a list of standards that may be referenced in this section:

1. American National Standards Institute (ANSI): C2, National Electrical Safety Code (NESC).
2. National Fire Protection Association (NFPA): 70, National Electrical Code (NEC).

## 1.02 SUBMITTALS

A Shop Drawings:

1. Product Data:
  - a. Exothermic weld connectors.
  - b. Mechanical connectors.

## 1.03 UL COMPLIANCE

A. Materials manufactured within scope of Underwriters Laboratories shall conform to UL Standards and have an applied UL listing mark.

PART 2 -- PRODUCTS

## 2.01 GROUND ROD

- A. Material: Copper clad.
- B. Diameter: Minimum 5/8 inch.
- C. Length: 20 feet.

## 2.02 GROUND CONDUCTORS

A. As specified in Section 16120, CONDUCTORS.

## 2.03 CONNECTORS

- A. Exothermic Weld Type:
  1. Outdoor Weld: Suitable for exposure to elements or direct burial.
  2. Manufacturers:

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- a. Erico Products, Inc.; Cadweld and Cadweld Exolon.
  - b. Thermoweld.
- B. Mechanical Type: Split-bolt, saddle, or cone screw type; copper alloy material.
1. Manufacturers:
    - a. Burndy Corp.
    - b. Thomas and Betts Co.

## 2.04 GROUNDING WELLS

- A. Ground rod box complete with cast iron riser ring and traffic cover marked GROUND ROD.
- B. Manufacturers:
1. Christy Co.; No. G5.
  2. Lightning and Grounding Systems, Inc.; I-R Series.

PART 3 -- EXECUTION

## 3.01 GENERAL

- A. Grounding shall comply with NFPA 70 and ANSI C2.
- B. Bond together system neutrals, service equipment enclosures, exposed non-current-carrying metal parts of electrical equipment, metal raceways, ground conductor in raceways and cables, receptacle ground connections, and metal piping systems.

## 3.02 WIRE CONNECTIONS

- A. Ground Conductors: Install in conduit containing power conductors and control circuits above 50 volts.
- B. Nonmetallic Raceways and Flexible Tubing: Install an equipment-grounding conductor connected at both ends to non-current carrying grounding bus.
- C. Connect ground conductors to raceway grounding bushings.
- D. Extend and connect ground conductors to ground bus in all equipment containing a ground bus.
- E. Connect enclosure of equipment containing ground bus to that bus.
- F. Bolt connections to equipment ground bus.

## PROJECT 11887

- G. Bond grounding conductors to metallic enclosures at each end, and to intermediate metallic enclosures.
- H. Junction Boxes: Furnish materials and connect to equipment grounding system with grounding clips mounted directly on box, or with 3/8-inch machine screws.

## 3.03 GROUND RODS

- A. Install full length with conductor connection at upper end.
- B. Install with connection point below finished grade, unless otherwise shown.

## 3.04 GROUNDING WELLS

- A. Install inside buildings, asphalt, and paved areas.
- B. Install riser ring and cover flush with surface.
- C. Place 9 inches crushed rock in bottom of each well.

## 3.05 CONNECTIONS

A. General:

1. Above grade Connections: Use exothermic weld, mechanical connectors.
2. Below grade Connections: Install exothermic weld type connectors.
3. Remove paint, dirt, or other surface coverings at connection points to allow good metal-to-metal contact.
4. Notify CITY before backfilling ground connections.

B. Exothermic Weld Type:

1. Wire brush or file contact point to bare metal surface.
2. Use welding cartridges and molds in accordance with manufacturer's recommendations.
3. Avoid using badly worn molds.
4. Mold to be completely filled with metal when making welds.
5. After completed welds have cooled, brush slag from weld area and thoroughly clean joint.

C. Mechanical Type:

1. Apply homogeneous blend of colloidal copper and rust and corrosion inhibitor before making connection.

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2. Install in accordance with connector manufacturer's recommendations.
3. Do not conceal mechanical connections.

## 3.06 METAL STRUCTURE GROUNDING

- A. Ground metal sheathing and exposed metal vertical structural elements to grounding system.
- B. Bond electrical equipment supported by metal platforms to the platforms.
- C. Provide electrical contact between metal frames and railings supporting pushbutton stations, receptacles, and instrument cabinets, and raceways carrying circuits to these devices.

## 3.07 MANHOLE AND PULLBOX GROUNDING

- A. Install one ground rod inside each.
- B. Ground Rod Floor Protrusion: 4 to 6 inches above floor.
- C. Make connections of grounding conductors fully visible and accessible.
- D. Connect all noncurrent-carrying metal parts, and any metallic raceway grounding bushings to ground rod with No. 6 AWG copper conductor.

## 3.08 SURGE PROTECTION EQUIPMENT GROUNDING

- A. Connect surge arrestor ground terminals to equipment ground bus.

## 3.09 BONDING

- A. Bond steel columns or major framing members to grounding system per National Electrical Code.

- END OF SECTION -

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## SECTION 16500 - LIGHTING

PART 1 - GENERAL

## 1.01 THE REQUIREMENT

- A. The CONTRACTOR shall furnish and install lighting fixtures, and accessories for all lighting systems, complete and operable, all in accordance with the requirements of the Contract Documents.

## 1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Electrical General Provisions.

## 1.03 REFERENCES

- A. Without limiting the generality of other requirements of these specifications, all work hereunder shall conform to the applicable requirements of the referenced portions of the following documents, to the extent that the requirements therein are not in conflict with the provisions of this Section:

1. National Electrical Manufacturers Association (NEMA): 250, Enclosures for Electrical Equipment (1,000 Volts Maximum).
2. National Fire Protection Association (NFPA): 70, National Electrical Code (NEC).
3. Underwriters Laboratories, Inc. (UL):
4. 595, Standard for Safety Marine-Type Electric Lighting Fixtures.
5. 924, Standard for Safety Emergency Lighting and Power Equipment.
6. ANSI C82.1 Specifications for Fluorescent Lamp Ballasts.
7. ANSI C84.4 Specifications for High Intensity Discharge Lamp Ballast (Multiple Supply Type).
8. Standards of the Certified Ballast Manufacturers Association.

## 1.04 SUBMITTALS

- A. The CONTRACTOR shall submit the following in accordance with the requirements of the Section entitled "Submittals."

1. Shop drawings and catalog data:
  - a. Luminaires:
    1. Catalog data sheets and pictures.

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2. Luminaire finish and metal gauge.
  3. Lens material, pattern, and thickness.
  4. Candle power distribution curves in two or more planes.
  5. Candle power chart 0 to 90 degrees.
  6. Lumen output chart.
  7. Average maximum brightness data in foot-lamberts.
  8. IES lighting classification and isolux diagram.
  9. Mounting or suspension details.
  10. Heat exchange and air handling data.
  11. Ballast type, location, and method of fastening.
- b. Lamps:
1. Voltages.
  2. Colors.
  3. Approximate life (in hours).
  4. Approximate initial lumens.
  5. Lumen maintenance curve.
  6. Lamp type and base.
  7. Copy of lamp order, including individual quantities, for Project.
- c. Ballasts:
1. Type.
  2. Wiring diagram.
  3. Nominal watts and input watts.
  4. Input voltage and power factor.
  5. Starting current, line current, and re-strike current values.
  6. Sound rating.
  7. Temperature rating.

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8. Efficiency ratings.
  9. Low temperature characteristics.
  10. Emergency ballasts rating and capacity data.
- d. Photo-Time Control:
1. Wiring diagram.
  2. Contact ratings.
- e. Photocells:
1. Voltage, and power consumption.
  2. Capacity.
  3. Contacts and time delay.
  4. Operating levels.
  5. Enclosure type and dimensions.
  6. Temperature range.
2. Complete literature for each fixture substitution. Photoelectric data shall include coefficients of utilization, average brightness, candle power distribution curves, and lumen output chart. Substitutions for specified fixtures shall be based upon quality of construction, light distribution, appearance, and maintenance. Other makes of fixtures than those specified will be approved by the CITY provided they are judged equal in all respects to the type specified.
- 1.05 UL COMPLIANCE
- A. Materials manufactured within scope of Underwriters Laboratories shall conform to UL Standards and have an applied UL listing mark.
- 1.06 QUALITY ASSURANCE
- A. Exterior lighting system operation shall be demonstrated during the hours of darkness to indicate that fixtures are properly focused, photo-cell operation is correct, and that fixture switching functions as intended. Similar requirements shall apply to interior lighting. Through demonstration, the CONTRACTOR shall also verify that panel schedules properly indicate the lighting outlets connected to each circuit.
- B. Lighting demonstration shall occur within 2 weeks prior to project acceptance.
- C. Lighting fixtures shall be stored in their original cartons from the manufacturers until the time of installation.

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## 1.07 CLEANUP

- A. Fixture lenses, diffusers and reflects shall be cleaned just prior to the time specified for the system demonstrations.
- B. Fixture trim, including support brackets, where finish has been damaged, shall be refinished.

PART 2 -- PRODUCTS

## 2.01 FIXTURES - GENERAL

- A. All fixtures shall be prewired with leads for connection to building circuits.
- B. All fluorescent and HID fixtures shall be provided with internal fuses, whether indicated on the lighting fixture schedule or not.

## 2.02 EXTERIOR FIXTURES

- A. Exterior fixtures and pole assemblies, in combination with their method of installation, shall be capable of meeting the wind loading criteria for the wind zone of installation as defined in the Florida Building Code. The wind loading requirement shall apply to the entire assembly including foundation (or base) and earthen materials used to secure the foundation or base. The calculation required under section 1.04.A.3 shall include this analysis.
- B. Exterior fixtures shall have corrosion-resistant hardware and hinged doors or lens retainer. Fixtures specified to be furnished with integral photo-electrical control shall be of the fixture manufacturer's standard design.

## 2.03 LUMINAIRES

- A. Specific requirements relative to execution of Work of this section are located in the Luminaire Schedule on Drawings.
- B. Feed-through type or separate junction box.
- C. Ballasts: Two-lamp when possible.
- D. Tandem wired for three-lamp, fluorescent fixtures.
- E. Wire Leads: Minimum 18 AWG.
- F. Component Access: Accessible and replaceable without removing luminaire from ceiling.
- G. Exterior Installations:
  - 1. UL Labeled: SUITABLE FOR WET LOCATIONS.

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2. Ballast: Removable, pre-wired.
3. When factory-installed photocells are provided, entire assembly shall have UL label. of protecting against excess charging and discharging.

## H. Ballasts

1. General:
2. Meet requirements for fixture light output, reliable starting, radio interference, total harmonic distortion, electromagnetic interference, and dielectric rating.
3. Certified by electrical testing laboratories to conform to Certified Ballast Manufacturer's specifications.

## I. Lighting Control

1. Photocell:
  - a. Automatic ON/OFF switching photo control.
  - b. Housing: Self-contained, die-cast aluminum, unaffected by moisture, vibration, or temperature changes.
  - c. Setting: ON at dusk and OFF at dawn.
  - d. Time delay feature to prevent false switching.
  - e. Field adjustable to control operating levels.
  - f. Manufacturers:
    - 1) Tork.
    - 2) Paragon.

PART 3 -- EXECUTION

## 3.01 LIGHTING FIXTURES

- A. Lighting fixtures shall be furnished complete with lamps at each outlet in accordance with the Fixture Schedule.
- B. Lighting fixtures shall be installed plumb and square. In all cases, fixture locations shall be coordinated with work of other trades to prevent obstruction of light from the fixtures. Fixtures shall be installed in accordance with the drawings.

## 3.02 LUMINAIRES

16500

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5

Lighting  
Ft Laud - 2nd Ave WT Restore  
CAM 18-0015  
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## A. General:

1. Install in accordance with manufacturer's recommendations.
2. Provide proper mounting as necessary for complete installation.
3. Provide additional structural reinforcements required to safely mount.
4. Install plumb and level.
5. Mounting heights shown are measured from bottom of luminaire to finished floor or finished grade, whichever is applicable.
6. Install each luminaire outlet box with galvanized stud.

## B. Lamps

1. Provide in each fixture, the number and type for which the fixture is designed, unless otherwise noted.

## C. Ballasts

1. Install in accordance with manufacturer's recommendations.
2. Utilize all ballast mounting holes to fasten securely within luminaire.
3. Replace noisy or defective ballasts.

## D. Lighting Control

1. Outdoor Luminaires: Photocells with time clocks will switch lights ON at dusk and OFF at a set time.

## E. Cleaning Following Construction

1. Remove all labels and other markings, except UL listing mark.
2. Wipe luminaires inside and out to remove construction dust.
3. Clean luminaire plastic lenses with anti-static cleaners only.
4. Touch up all painted surfaces of luminaires and poles with matching paint ordered from manufacturer.
5. Replace all defective lamps at time of Substantial Completion.

- END OF SECTION -

**APPENDIX**



**APPENDIX A**  
**TANK INSPECTION REPORT**

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EXHIBIT 3

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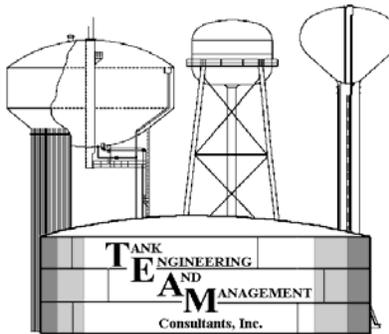
# ELEVATED WATER STORAGE TANK INSPECTION REPORT

## CITY OF FT. LAUDERDALE

### 1,000,000 GALLON ELEVATED WATER TANK SECOND AVENUE

### FT. LAUDERDALE, FLORIDA

### JUNE 2008



PO Box 889 ♦ 4000 STATE ROAD 60 EAST  
MULBERRY, FLORIDA 33860  
(863) 354-9010 ♦ (863) 648-4988 FAX



**ELEVATED WATER STORAGE TANK  
INSPECTION REPORT**

**JUNE 2008**

**CITY OF FORT LAUDERDALE**

**1,000,000-GALLON ELEVATED WATER TANK  
SECOND AVENUE**

**PREPARED FOR:  
HAZEN AND SAWYER, P.C.  
Hollywood, Florida**

**PREPARED BY:  
TANK ENGINEERING AND MANAGEMENT CONSULTANTS, INC.  
PO Box 889  
Mulberry, Florida 33860  
Phone (863) 354-9010 Fax (863) 648-4988**

By:



Jeff Kitchen  
API Certified Tank Inspector No. 22467  
NACE Certified Corrosion Technologist

Reviewed By:

Richard C. Hardy, Jr., P.E.  
P.E. No. 65751

As authorized by the Hazen and Sawyer Agreement, Job No. 43000-050, *Tank Engineering and Management Consultants, Inc.* has performed a washout and inspection of the City of Fort Lauderdale's 1,000,000 Gallon "Second Avenue" Elevated Water Storage Tank. This report represents the results of that inspection.

### **EXECUTIVE SUMMARY**

Prior to this inspection the tank was taken off-line and emptied by City personnel. The manway at the base of the riser was opened for this inspection by TEAM personnel. All areas of the tank that were accessible from the existing ladders were inspected. The interior and exterior of the tank are in fair structural condition. Most of the safety items, such as ladders and handrails, do not comply with current OSHA standards. The coating on the interior is in fair condition, however, most of the coating is missing from the roof underside. The exterior coating is faded and aged allowing corrosion on the steel. Further details on the inspection are available in the following report. A complete list of recommended repairs is available at the end of this report. Photographs of the key inspection points are also included at the end of the report.

### **INSPECTION STANDARDS**

The inspection was performed in accordance with AWWA Manual M42 App. "C" Standards.

#### **DEFINITIONS:**

Throughout this report, certain subjective terms will be used to describe the condition of various items. These terms are typically meant to imply the following definitions:

Good – Currently in nearly new condition. Minor defects may be present, but do not present a hindrance to the operation of the item.

Fair – Slightly less-than ideal condition. This item has not failed, but is in a state of degradation that will likely result in failure in the near future.

Poor – The item has failed, or is near failure.

### **INSPECTION PERSONNEL**

This washout and inspection was performed on July 2 and 3, 2008, by Mr. Jeff Kitchen, Mr. Chris Moore, and Mr. John Morgan of *Tank Engineering and Management Consultants, Inc.*

### **TANK HISTORY:**

This tank is a 1,000,000 gallon, Multi-Column, Radial Cone, welded steel tank. No nameplate was attached to the tank at the time of inspection. This tank appears to have been built in the early 1950's by Chicago Bridge & Iron, Inc. The following information was observed:

<b>Number Of Columns:</b>	10
<b>Diameter of Columns:</b>	36 in.
<b>Number Of Panels:</b>	3

<b>Riser/Type:</b>	96 in. Dia. – Wet
<b>Inlet/Outlet:</b>	16 in.
<b>Overflow:</b>	8" dia.

Water is carried to and from the tank by a 16 in. inlet/outlet pipe which penetrates the side of the riser. The tank is also equipped with an 8 inch diameter overflow pipe with a weir at the inlet.

### **INSPECTION RESULTS**

#### **Foundation, Base Plates, And Anchor Bolts:**

The foundation concrete observed above grade was found to be in good condition on all column piers. The column baseplates were all found to be in good condition. The grout under the baseplates is cracked. There are four 2" diameter anchor bolts and nuts per column. All of the anchor studs had some degree of corrosion on the backside. This situation is common with these types of anchor chairs. We recommend abrasive blasting the anchor chair interiors to check for corrosion metal loss to the studs. Once the condition is determined and necessary repairs are complete, the chairs should be sealed to prevent further corrosion.

#### **Tower:**

The tower columns were all found to be straight and aligned. All columns were checked for water inside and none was found. There is no sign of differential settlement. All sway rods, struts, riser stay rods, earplates, clevis pins, and turnbuckles were checked. Most were found to be in good structural condition. The "belly rods" and riser stay rods show signs of corrosion.

*Note: The riser stay rods were used for construction of the tank, and are often used for rigging purposes during repairs and repainting operations. These rods were not tested during this inspection and must be thoroughly examined before use in any construction or painting purposes*

#### **Riser:**

The 8 feet diameter riser was found to be in good structural condition. The interior of the riser is equipped with a ladder leading to the tank interior. This ladder was found to be in good condition. The safety grate at the top of the riser is in poor condition. The riser manway was removed during this inspection. The manway appeared to be in good condition when re-installed.

A 3" drain is installed in the riser, near the bottom. The 8" overflow pipe and the 16" inlet/outlet pipe also penetrate the riser side wall. All were found in good condition.

#### **Exterior Tank, Balcony, Roof, And Roof Vent:**

The exterior of the tank and tank roof were found to be in good condition structurally. There are two balconies and a catwalk on this tank. The balcony at the top of the riser is in fair structural condition. Corrosion spots are evident in several locations. The catwalk out to the main balcony is also corroded over most of the surfaces. The main balcony is in good condition with only minor rust spots. The handrails on both balconies and the catwalk do not meet current OSHA

requirements. The current OSHA standard height is 42". The handrails on this tank all measured 35"-36", which was the standard at the time this tank was built.

The roof vent was found in poor condition. The vent structure is severely corroded. Replacement is recommended.

### **Tank Interior:**

Due to the thick coating over most of the interior, the steel could not be inspected. It appears that the coating is protecting the steel. A general corrosion layer is visible over most of the interior roof underside. No deep pitting was noticed in visible areas. The grate over the riser opening is in poor condition. This grate is not safe and should be replaced.

### **Existing Coatings:**

#### Interior:

The interior of the tank appears to be coated with a hot-applied coal tar coating. This type of coating is typically applied while heated, using a mop, or similar equipment. This material is very thick in most locations. The thickness typically ranged from 1/16" to 1/8" thick. However, the underside of the roof did not appear to be coated. It is unclear whether this area was coated at one time and the coating failed, or this surface was never coated.

The coating on the interior does not comply with current sanitary requirements. Even though the coating is protecting most of the steel, we still recommend replacing the coating with an NSF approved coating system. The roof underside should be painted in the near future due to corrosion. The most cost effective plan would be to recoat the entire interior at that time.

#### Exterior:

The exterior coating is in fair condition. According to our research, the exterior was last painted in 1991. Current coating thickness ranges from 15-20 mils. There are numerous areas where the coating has failed, allowing the steel to corrode. Overall, the coating is faded. Coating adhesion is approximately a "4-A" according to NACE standards. A coating sample was gathered on the exterior coating and laboratory tested for heavy metals. The method of preparation was EPA 600/R-93/200M-P. The test method used was EPA 6010B. The results were as follows:

Lead – 0.11% by weight  
Chromium – 0.0033% by weight  
Cadmium – Below Detectable Limits

Based on these test results, the exterior coating contains traces of lead in excess of OSHA allowable limits (0.05% by weight) to be considered "lead free". When any work is performed on the tank exterior that will disturb the paint (grinding, cutting, etc.), precautions will have to be taken to protect workers and the surrounding environment, in accordance with OSHA Lead Abatement standards.

Due to the large percentage of surface area that is corroded and the apparent age of the coating,

we recommend complete removal and recoating over the entire exterior.

**Accessories:**

This tank is equipped with the following accessories and appurtenances:

1. Inlet/Outlet Pipe: One (1) 16" steel inlet/outlet pipe. This pipe was observed to be in good condition.
2. Overflow Pipe: One (1) 8" diameter welded steel pipe with a weir on the inlet. This pipe runs underground and discharges in a nearby ditch. This layout may constitute an "illegal cross-connect" according to Florida Health Department standards. No flap valve or screen could be located to prevent ingress through the overflow pipe.
3. Ladders:  
One (1) interior riser ladder – Good condition, not equipped with a climbing safety device. Ladder rungs are not anti-skid. The ladder dimensions do not meet current OSHA standards.

One (1) interior tank ladder to roof – Good condition, not equipped with a climbing safety device. Ladder rungs are not anti-skid. The ladder dimensions do not meet current OSHA standards.

One (1) exterior riser ladder – Fair condition, corrosion at joints, not equipped with a climbing safety device. The ladder dimensions do not meet current OSHA standards. The top five rungs are severely corroded and are not safe for use.

One (1) rolling roof ladder – Good condition, not equipped with a climbing safety device. Ladder rungs are not anti-skid. The ladder construction does not meet current OSHA standards. In addition, rolling roof ladders present a safety hazard. If the center anchor point becomes rusted and weakened, a climber has no warning before the ladder breaks free, which would result in a fall. We highly recommend replacing this ladder with an OSHA standard ladder that is welded in place.

4. Riser Access Manway: A oval manway is provided at the base of the riser for access to the tank interior. This manway was opened for this inspection and was found in good condition.
5. Roof Center Vent: The center vent is in poor condition. The structure is severely corroded. We recommend replacement.
6. Roof Hatch: One (1) 24" Square Roof Hatch. The roof hatch and neck are in poor condition. The hatch neck is corroded around the top, leaving sharp edges. The hatch hinge is also corroded. Replacement is recommended.

7. **Aircraft Obstruction Lights:** There are two aircraft obstruction lights mounted on top of the tank. These lights and the mounting hardware are in fair condition. The conduit is beginning to corrode. The operation of these lights was not checked during this inspection.

### **Sanitary Conditions:**

Based on the condition of the interior of the tank we recommend washing out the interior of the tank every two or three years to avoid collection of sediment and organic deposits.

## **RECOMMENDATIONS**

### **Mechanical:**

**Belly Rods:** The riser rods under the belly appear to be corroded. Before being used for rigging purposes, replace or repair any questionable rods.

**Anchor Bolts:** Abrasive blast each anchor bolt to determine metal loss. Repair if necessary. After repairs, seal all anchor chair openings to avoid further corrosion.

**Roof Vent:** Replace the roof vent with an aluminum unit.

**Roof Hatch:** Replace the roof hatch with a new unit of similar design.

**Ladders:** Replace the exterior riser ladder, interior tank ladder, and interior riser ladder with OSHA-compliant designs. Replace the rolling roof ladder with an OSHA compliant ladder that is welded in a permanent position. Install fall arrest devices on all ladders.

**Handrails:** Replace the handrails on the riser balcony, catwalk, and main balcony with OSHA compliant design handrails.

**Riser Safety Grate:** Install a new safety grate over the interior riser opening.

### **Coatings:**

**Exterior:** We recommend that the entire exterior of the tank be abrasive blasted and recoated. The recommended exterior coating system is an organic zinc primer, urethane intermediate coat, and a fluorourethane finish coat. The ladder rungs on all of the ladders need to be coated with a non-skid coating.

**Interior Tank Bowl And Riser:** We recommend removing the coating on the interior by abrasive blasting and applying an NSF-approved immersion grade epoxy coating system. The ladder rungs on all of the ladders need to be coated with a non-skid coating.

*Typical coating systems can be found in AWWA Standard D102.*

**ECONOMIC CONSIDERATIONS**

- A. The estimated cost to build a new 1-million gallon elevated water tank would range from \$2-million to \$2.5 million depending on the type of tank and current steel costs.
- B. The estimated cost to perform the above listed mechanical repairs would be approximately .....**\$75,000.00**
- C. The estimated cost to blast and recoat the exterior surfaces of the tank and tower would be approximately.....**\$600,000.00**
- D. The estimated cost to blast and recoat the interior surfaces of the tank and riser would be approximately.....**\$150,000.00**

We appreciate the opportunity to perform this inspection service for you. If you should have any questions regarding the information contained in this report, please do not hesitate to contact us.

Sincerely,  
*Tank Engineering and Management Consultants, Inc.*

*This report, the conclusions, recommendations, and comments contained in this report are based upon spot examinations from readily accessible parts of the tank. Should latent defects or conditions which vary significantly from those described in the report be discovered at a later date, these should be brought to the attention of a qualified individual at that time. These comments and recommendations should be viewed as information to be used by the Owner in determining the proper course of action and not to replace a complete set of specifications. All repair and maintenance work should be done in accordance with AWWA Standard D100 and D102. The preparation of specifications, project management, and the inspection of repairs and rehabilitation projects for elevated tanks is a specialized field and it is our recommendation that the Owner consider the use of engineers and technicians qualified by education and experience to handle these projects.*



1. Tank overall 1.



2. Tank overall 2.



3. Tower base.



4. Column anchor bolts.



5. Base of interior ladder.



6. Interior roof rafters.



7. Interior top of ladder brace.



8. Interior overall.



9. Riser grate 1.



10. Riser grate 2.



11. Riser grate 3.



12. Riser ladder.



13. Riser base 1.



14. Riser base 2.



15. Riser Base.



16. Ladder grate.



17. First level riser rods.



18. Second level riser rods.



19. Top of 3 riser ladder.



20. Riser balcony.



21. Riser balcony floor.



22. Tank support beams.



23. Catwalk handrail.



24. Under tank catwalk.



25. Tank balcony floor.



26. Base of roof ladder.



27. Roof ladder rollers.



28. Roof ladder.



29. Old containment lugs.



30. Roof vent.



31. Roof vent hood.



32. Roof vent screen.



33. Rolling ladder base.



34. Roof hatch.



35. Roof hatch vent.



36. Top of interior ladder.

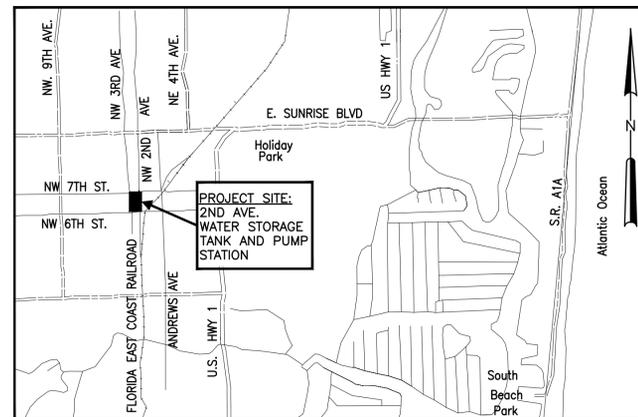
# CITY OF FORT LAUDERDALE

## PROJECT NO. 11887

# NW 2ND AVENUE TANK RESTORATION

VOLUME A: HAZEN DRAWINGS  
BIDDING - JANUARY 2017

**Hazen**  
HAZEN AND SAWYER  
4000 HOLLYWOOD BOULEVARD, SUITE 750N  
HOLLYWOOD, FLORIDA 33021  
CERTIFICATE OF AUTHORIZATION NO. : 2771



FORT LAUDERDALE CITY COMMISSION

- JOHN P. "JACK" SEILER MAYOR
- BRUCE G. ROBERTS COMMISSIONER - DISTRICT I
- DEAN J. TRANTALIS COMMISSIONER - DISTRICT II
- ROBERT L. MCKINZIE COMMISSIONER - DISTRICT III
- ROMNEY ROGERS COMMISSIONER - DISTRICT IV

PREPARED FOR THE OFFICE OF  
THE CITY ENGINEER  
under the direct supervision  
of \_\_\_\_\_  
MICHAEL W. WENGRENOVICH  
FLA. P.E. NO. 34939



LOCATION MAP

NOT TO SCALE

# GENERAL NOTES

## GENERAL CONSTRUCTION NOTES:

- NO CONNECTIONS FOR THE PURPOSE OF OBTAINING WATER SUPPLY DURING CONSTRUCTION SHALL BE MADE TO ANY FIRE HYDRANT OR BLOW-OFF STRUCTURE WITHOUT FIRST OBTAINING PERMISSION AND A CONSTRUCTION METER FROM THE CITY OF FORT LAUDERDALE.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING, MOVING AND RELOCATING OR REPLACING ALL WATER SERVICES OR SEWER LATERALS WHICH ARE ENCOUNTERED DURING EXCAVATION. THE CONTRACTOR SHALL SUBMIT A WRITTEN PLAN FOR WATER SERVICE AND WASTEWATER SERVICE DISRUPTION FOR APPROVAL 7 (SEVEN) CALENDAR DAYS PRIOR TO THE ANTICIPATED DISRUPTION. THE CONTRACTOR SHALL NOTIFY THE PROPERTY OWNERS 48 HOURS IN ADVANCE OF ANY WORK ON THEIR SERVICES. THIS WORK SHALL BE CONSIDERED INCIDENTAL.
- THE CONTRACTOR MUST USE EXTREME CARE TO AVOID DAMAGE OR DISRUPTION TO ANY EXISTING UTILITIES, WHETHER SHOWN ON THE PLANS OR NOT. ALL PLAN LOCATIONS ARE APPROXIMATE AND SHALL BE FIELD VERIFIED. CONTRACTOR IS TO CONTACT SUNSHINE STATE ONE CALL OF FLORIDA AT 1-800-432-4770 AND ALL OTHER PARTICIPATING UTILITIES 2 FULL BUSINESS DAYS PRIOR TO CONSTRUCTION FOR FIELD MARKUP LOCATIONS OF EXISTING UTILITIES AND FACILITIES.
- THE CONTRACTOR SHALL INFORM THE CITY AT LEAST 48-HOURS IN ADVANCE OF CONSTRUCTION, IN WRITING IF ANY CONFLICT IS DISCOVERED DURING POT HOLE OPERATIONS FOR CLARIFICATION BY THE CITY.
- IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE UTILITIES DEPARTMENT OF THE CITY OF FORT LAUDERDALE AT LEAST TWO (2) BUSINESS DAYS IN ADVANCE TO COORDINATE ANY ACTIVITY TO BE PERFORMED BY THE CITY'S UTILITIES DEPARTMENT.
- CONTRACTOR SHALL NOT DISTURB AREAS OUTSIDE EXISTING RIGHTS-OF-WAY.
- IN GENERAL, EXISTING STRUCTURES AND UTILITIES ARE NOTED AS EXISTING AND/OR SHOWN IN THIN LINES. NEW CONSTRUCTION IS IN HEAVY LINES AND/OR UNDERLINED.
- ALL WORK WITHIN STATE DEPARTMENT OF TRANSPORTATION (FDOT) RIGHT-OF-WAYS SHALL BE IN CONFORMANCE WITH FDOT SPECIFICATIONS AND PERMIT REQUIREMENTS.
- ALL WORK WITHIN BROWARD COUNTY RIGHT-OF-WAYS SHALL BE IN CONFORMANCE WITH THE BROWARD COUNTY MINIMUM STANDARDS AND/OR REQUIREMENTS.
- CONTRACTOR SHALL COMPLY WITH ALL LOCAL CITY, COUNTY AND STATE REGULATIONS PERTAINING TO THE CLOSING OF PUBLIC STREETS FOR USE OF TRAFFIC DURING CONSTRUCTION.
- CONTRACTOR SHALL PREPARE AND SUBMIT MAINTENANCE OF TRAFFIC (MOT) PLANS TO FDOT, CITY OF FORT LAUDERDALE, BROWARD COUNTY AS REQUIRED FOR WORK TO BE DONE WITHIN THEIR R/W PRIOR TO COMMENCEMENT OF WORK. SPECIFIC AGENCY MOT REQUIREMENTS ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
- STATIONS SHOWN ON THE DRAWINGS ARE BASED ON THE ESTABLISHED BASELINE AND SHALL NOT BE CONSIDERED AS DISTANCES OR AS A MEASURE OF THE LINEAR FOOTAGE OF PIPE TO BE INSTALLED.
- THE PROJECT DOES NOT INCLUDE ANY DEMOLITION OTHER THAN REMOVAL OF STEEL LADDERS AND ROOF VENTS, AND THERE IS NO ASBESTOS ON THE WATER TOWER.
- CONTRACTOR SHALL MAINTAIN ACCESS TO PRIVATE PROPERTIES AT ALL TIMES.
- ALL OPEN TRENCHES AND HOLES ADJACENT TO ROADWAY OR WALKWAY SHALL BE PROPERLY MARKED AND BARRICADED TO ASSURE THE SAFETY OF BOTH VEHICULAR AND PEDESTRIAN TRAFFIC.
- TRENCHES OR HOLES NEAR WALKWAYS, IN ROADWAYS OR THEIR SHOULDERS SHALL NOT BE LEFT OPEN DURING NIGHT TIME HOURS WITHOUT ADEQUATE PROTECTION.
- CONTRACTOR SHALL PROMPTLY REPAIR AND RESTORE EXISTING PAVEMENT, SIDEWALKS, CURBS, DRIVEWAYS, PIPES, RESIDENTIAL AND COMMERCIAL SPRINKLER LINES, CONDUIT, CABLES, ETC. AND LANDSCAPE AREAS DAMAGED AS A RESULT OF CONSTRUCTION ACTIVITIES.
- CONTRACTOR SHALL PROVIDE TEMPORARY FENCING AS REQUIRED BY AGENCIES HAVING JURISDICTION OVER THE PROJECT AND/OR WHEN REQUIRED FOR PUBLIC SAFETY.
- THE CONTRACTOR SHALL BE RESPONSIBLE AT ALL TIMES THROUGHOUT THE DURATION OF CONSTRUCTION AND UNTIL ACCEPTANCE OF WORK, FOR THE PROTECTION OF EXISTING AND NEWLY INSTALLED UTILITIES FROM DAMAGE OR DISRUPTION OF SERVICE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TAKING SUCH MEASURES AS NECESSARY TO PROTECT THE HEALTH, SAFETY AND WELFARE OF THOSE PERSONS HAVING ACCESS TO THE WORK SITE.
- CONTRACTOR SHALL ADJUST TO GRADE ALL EXISTING UTILITY CASTINGS INCLUDING VALVE BOXES, MANHOLES, HAND HOLES, PULL BOXES, INLETS AND SIMILAR STRUCTURES IN CONSTRUCTION AREA TO BE OVERLAYED WITH ASPHALT.
- EXISTING TRAFFIC SIGNS SHALL BE RESET UPON COMPLETION PER FDOT STANDARDS. COST SHALL BE CONSIDERED INCIDENTAL. CONTRACTOR SHALL REPAIR OR REPLACE DAMAGED TRAFFIC SIGNAL LOOPS PER BROWARD COUNTY TRAFFIC ENGINEERING SPECIFICATIONS; COST SHALL BE INCIDENTAL.
- CONTRACTOR SHALL RESTORE EXISTING PAVEMENT AND PAVEMENT MARKINGS/SIGNAGE TO ORIGINAL PRE-CONSTRUCTION CONDITION OR AS OTHERWISE SPECIFIED IN CONTRACT DOCUMENTS. THIS WORK SHALL BE CONSIDERED INCIDENTAL.
- ALL CONSTRUCTION WITHIN FDOT R/W MUST CONFORM WITH FDOT SPECIFICATIONS, STANDARDS, AND PERMIT REQUIREMENTS. NO WORK SHALL COMMENCE WITHIN FDOT R/W'S WITHOUT AN FDOT PERMIT. FULL LANE WIDTH RESTORATION TO MATCH EXISTING PAVEMENT SECTION IS REQUIRED IN ACCORDANCE WITH FDOT STANDARDS FOR PROPOSED WORK WITHIN FDOT R/W.
- CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS AND ELEVATIONS BEFORE STARTING CONSTRUCTION.
- ELEVATIONS SHOWN HEREON ARE BASED ON THE NATIONAL GEODETIC VERTICAL DATUM 1929.

## LEGEND

### ABBREVIATIONS

C.B.	=	CATCH BASIN
C.L.F.	=	CHAIN LINK FENCE
CMP	=	CORRUGATED METAL PIPE
CONC.	=	CONCRETE
DIA.	=	DIAMETER
F.H.	=	FIRE HYDRANT
GAS	=	GAS MAIN
INV.	=	INVERT
OHW	=	OVERHEAD WIRES
R/W	=	RIGHT-OF-WAY
RCP	=	REINFORCED CONCRETE PIPE
SAN	=	SANITARY
SMH	=	SANITARY MANHOLE
S.S.	=	STAINLESS STEEL
S.V.	=	SEWER VALVE
T.O.P.	=	TOP OF PIPE
UNK.	=	UNKNOWN TREE TYPE
U.T.O.	=	UNABLE TO OBTAIN DATA
U.V.	=	UNKNOWN VALVE
W.V.	=	WATER VALVE
B.C.H.C.E.D.	=	BROWARD COUNTY HIGHWAY CONSTRUCTION AND ENGINEERING DEPARTMENT.

# LIST OF DRAWINGS

SHEET COUNT	SHEET NO.	SHEET DESCRIPTION	
<b>GENERAL</b>			
	00	TITLE SHEET AND	LOCATION MAP
1	G-1	LIST OF DRAWINGS AND	GENERAL NOTES
2	G-2	LEGEND	AND SYMBOLS
3	G-3	AERIAL	PHOTO
4	G-4	BOUNDARY AND	TOPOGRAPHIC SURVEY
5	G-5	EXISTING	SITE PLAN
<b>SURVEY</b>			
6	SP-1	UPDATED TOPOGRAPHICAL SURVEY	UPDATED SURVEY
<b>STRUCTURAL</b>			
7	S-1	TANK DEMOLITION	TOP PLAN AND ELEVATION
8	S-2	TANK DEMOLITION	GROUND LEVEL PLAN
9	S-3	TANK DEMOLITION	CYLINDER RISER LADDERS
10	S-4	TANK DEMOLITION	PHOTOS SHEET 1
11	S-5	TANK DEMOLITION	PHOTOS SHEET 2
12	S-6	TANK DEMOLITION	PHOTOS SHEET 3
13	S-7	TANK DEMOLITION	PHOTOS SHEET 4
14	S-8	TANK DEMOLITION	PHOTOS SHEET 5
15	S-9	TANK	ROOF PLAN
16	S-10	TANK	ELEVATION AND ROD PLAN
17	S-11	TANK	DETAILS
18	S-12	TANK	ROOF VENT AND ROOF HATCH
19	S-13	BALCONY PLATFORM	PLAN AND DETAILS
20	S-14	RISER PLATFORM	PLAN AND DETAILS
21	S-15	RISER PLATFORM	HANDRAIL DETAILS
22	S-16	ROOF AND LADDER	DETAILS
23	S-17	RISER LADDERS	SECTIONS AND DETAILS
24	S-18	RISER SAFETY GRATE	DETAILS
25	S-19	WATER SAMPLE PIPING	ELEVATION AND DETAILS
26	S-20	WATER LEVEL SENSING PIPING	ELEVATION AND DETAILS
27	S-21	ACCESS OPENING MODIFICATION	PHOTOS AND DETAILS
<b>ELECTRICAL</b>			
28	E-1	SITE PLAN	ELECTRICAL
29	E-2	ELECTRICAL	TOP PLAN
30	E-3	ELECTRICAL	ELEVATION AND SCHEDULES
31	E-4	ELECTRICAL	DETAILS



HAZEN AND SAWYER  
4000 HOLLYWOOD BLVD., SUITE 750N  
FORT LAUDERDALE, FLORIDA 33309  
CERTIFICATE OF AUTHORIZATION NO. 12771

State of Florida  
Professional Engineer  
License No. 34939  
  
MICHAEL W.  
WENGROVICH

DRAWN BY:	DATE:	DESIGNED BY:	SCALE:	CHECKED BY:	FIELD BOOK:
GHD	07/15/11	MWW	N/A	MWW	N/A

**CITY OF FORT LAUDERDALE**  
PUBLIC WORKS DEPARTMENT  
**ENGINEERING & ARCHITECTURE**  
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

NO.	REVISIONS		DATE	DESCRIPTION
	BY	CHKD		
1			01/28/2017	SIS BIDDING

**PROJECT # 11887**  
**NW 2ND AVENUE TANK RESTORATION**  
**LIST OF DRAWINGS AND**  
**GENERAL NOTES**

SHEET NO.	OF
<b>G-1</b>	<b>05</b>
TOTAL:	31
CAD FILE:	11887-G01-030INDX
DRAWING FILE NO.	WS-00-0015



Hazen and Sawyer  
Professional Engineer  
4000 HOLLYWOOD BOULEVARD, SUITE 750N  
FORT LAUDERDALE, FLORIDA 33301  
CERTIFICATE OF AUTHORIZATION NO. : 2771

State of Florida  
Professional Engineer  
License No. 346939  
MICHAEL W.  
WENGROVICH

DATE: 07/15/11  
DRAWN BY: JAK/GHD  
DESIGNED BY: SCALE: N/A  
CHECKED BY: MWW  
FIELD BOOK: N/A

CITY OF FORT LAUDERDALE  
PUBLIC WORKS DEPARTMENT  
ENGINEERING & ARCHITECTURE  
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

NO.	REVISIONS		DESCRIPTION
	DATE	BY	
1	01/28/2017	S/S MWW	BIDDING

PROJECT # 11887  
NW 2ND AVENUE TANK RESTORATION  
LEGEND  
AND SYMBOLS

SHEET NO.	OF
<b>G-2</b>	<b>05</b>
TOTAL:	31
CAD FILE:	11887-G02-030LEGN
DRAWING FILE NO.	WS-0010015

### SYMBOLS

#### GENERAL/CIVIL

- AERIAL TARGET
- BELLSOUTH MANHOLE
- BENCH MARK
- CATCH BASIN
- CAPPED IRON ROD (AS NOTED)
- CHISEL SQUARE
- CLEAN OUT
- CONCRETE MONUMENT (AS NOTED)
- CONCRETE UTILITY POLE
- ELECTRICAL TRANSFORMER PAD
- ELECTRIC BOX
- ELECTRIC MANHOLE
- ELECTRIC METER/SERVICE
- FIRE HYDRANT
- GAS RISER
- GUY ANCHOR AND WIRE
- GROUND ROD
- IRON PIPE (I.P.)
- LIGHT POLE
- MAIL BOX
- MANHOLE
- P.K. NAIL
- SANITARY MANHOLE
- SIGN
- STORM MANHOLE
- SOIL BORING
- TEST EXCAVATION LOCATION
- TELEPHONE CABLE RISER
- TELEPHONE MANHOLE
- TELEPHONE RISER
- TRAFFIC SIGNAL BOX
- TRAFFIC SIGNAL POLE
- TRAVERSE POINT
- VALVE BOX
- VALVE PIPE
- WATER METER
- WELL
- WOOD UTILITY POLE
- PROPOSED SPOT ELEVATION
- EXISTING SPOT ELEVATION
- CONTOUR LINE ELEVATION

#### LINETYPES

- PROPERTY LINE
- EASEMENT LINE
- OVERHEAD LINE
- PROPOSED PIPELINE/STRUCTURE
- PROPOSED PIPELINE (DOUBLE LINE IF SCALE OF DRAWING PERMITS)
- CENTERLINE OF PIPE/ROAD ETC.
- CHAIN LINK FENCE
- WOOD FENCE
- EXISTING STRUCTURES
- EXISTING PIPE LINES
- CONTOUR LINES
- EXISTING SANITARY SEWER
- EXISTING OVERHEAD UTILITY LINES

#### LANDSCAPING

- PALM
- PINE
- UNKNOWN SPECIES
- HEDGE
- VEGETATION
- BUSH
- TREE

**NOTE:**  
SIZE OF TRUNK DIAMETER IN INCHES IS SHOWN NEXT TO TREE SYMBOLS.

#### MECHANICAL

- MAGNETIC METER (SINGLE LINE)
- MAGNETIC METER (DOUBLE LINE)
- VENTURI METER
- GAUGE
- PNEUMATIC VALVE
- SOLENOID
- MOTOR OPERATED
- REDUCER (SINGLE LINE)
- REDUCER (DOUBLE LINE)
- CONCRETE PIPE SUPPORT
- BALL VALVE
- BUTTERFLY VALVE / DAMPER
- BALL CHECK VALVE

#### MECHANICAL CONT.

- CHECK VALVE
- PUMP CONTROL VALVE
- PLUG VALVE
- GATE VALVE
- DIAPHRAGM VALVE
- THROUGH PLUG VALVE
- THREE WAY VALVE
- PRESSURE REDUCING/RELIEF VALVE
- BACKPRESSURE REGULATOR
- HOSE BIBB (PLAN)
- HOSE BIBB (ELEVATION)
- MECHANICAL COUPLING
- HARNESSED MECHANICAL COUPLING
- GROOVED COUPLING OR ARCHED BAND
- HARNESSED EXPANSION JOINT
- EXPANSION JOINT
- UNION
- WELDED JOINT
- FLANGED JOINT
- MECHANICAL JOINT
- PUSH-ON JOINT
- THREADED JOINT
- SOCKET WELDED JOINT
- PIPE MATERIAL CHANGE

### SECTION AND DETAIL IDENTIFICATION

#### SECTION IDENTIFICATION

A. SECTION CUT ON DRAWING G-1:

B. ON DRAWING G-2 THIS SECTION IS IDENTIFIED AS:

#### DETAIL IDENTIFICATION

A. DETAIL CALL-OUT ON DRAWING G-1 AS:

B. ON DRAWING G-2 THIS DETAIL IDENTIFIED AS:

#### STANDARD DETAIL IDENTIFICATION

A. STANDARD DETAIL CALL-OUT ON DRAWING G-1 AS:

B. STANDARD DETAIL ON DRAWING G-10 THIS DETAIL IDENTIFIED AS:

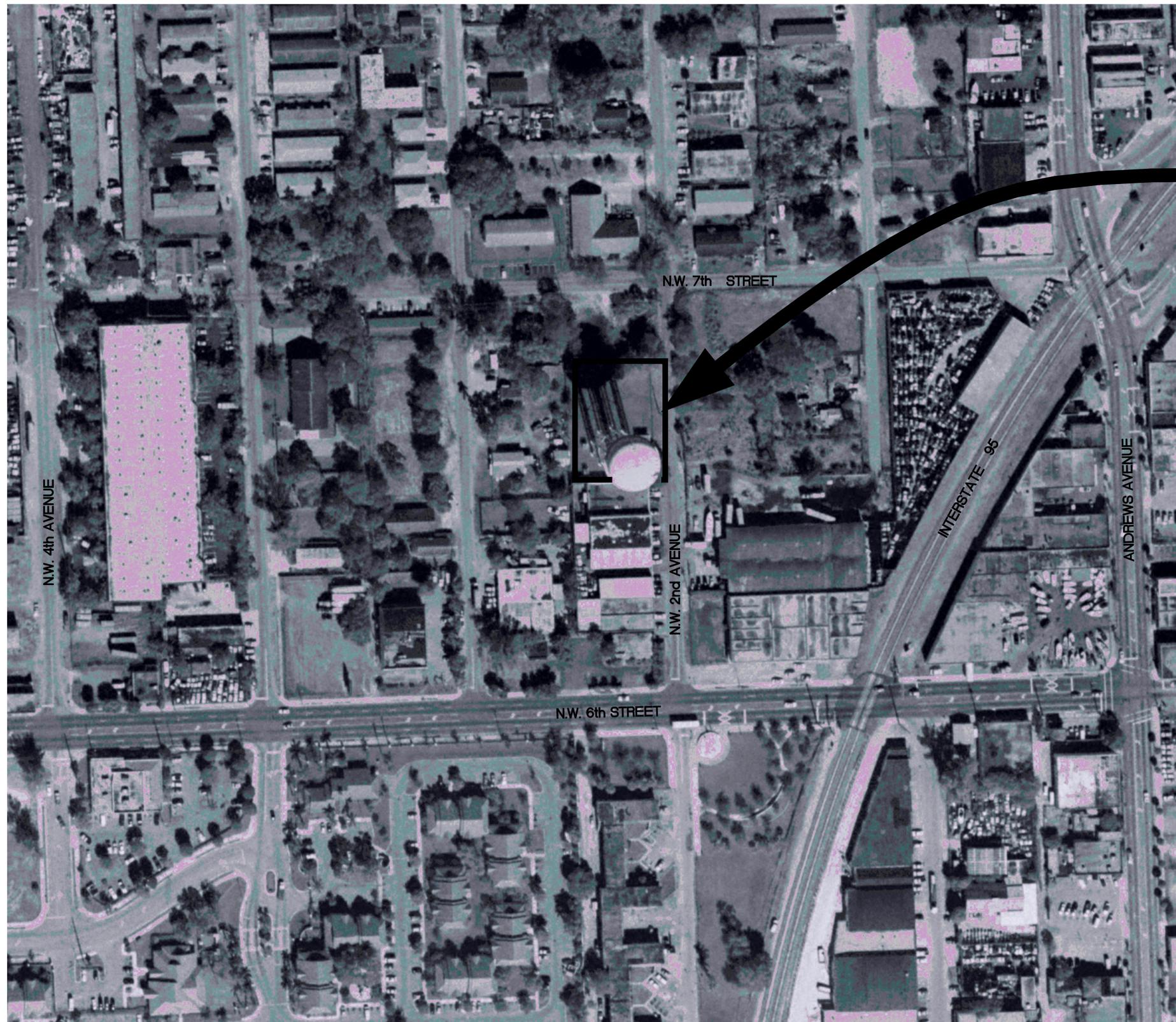
**NOTES:**

- (1) IF PLAN AND SECTION (OR DETAIL CALL-OUT AND DETAIL) ARE SHOWN ON SAME DRAWING, DRAWING NUMBER IS REPLACE BY A DASH (-).
- (2) IF SECTION IS SHOWN IN TWO OR MORE LOCATIONS, THE FIRST DRAWING NUMBER WHERE THE SECTION IS SHOWN IS DISPLAYED IN THE SECTION TITLE.
- (3) IF A DETAIL IS SHOWN IN TWO OR MORE LOCATIONS, THE DRAWING NUMBER IN THE DETAIL TITLE IS REPLACED WITH A LINE.
- (4) IF THE DETAIL TITLE REFERS TO A STANDARD DETAIL, THE DRAWING NUMBER IN THE DETAIL TITLE IS REPLACED WITH THE ABBREVIATION STD.

**GENERAL NOTES:**

- (1) ELECTRICAL SYMBOLS SHOWN ON ELECTRICAL SHEETS.
- (2) FOR WELDING SYMBOLS USE AMERICAN WELDING SOCIETY STANDARD SYMBOLS.

\* DENOTES DIMENSIONS OR ELEVATIONS DEPENDENT ON EQUIPMENT SUPPLIED.



2nd AVENUE  
STORAGE TANK  
AND PUMP STATION



**PROPERTY ADDRESS:**  
625 NW 2nd AVENUE  
FORT LAUDERDALE, FLORIDA 33311

**PROPERTY OWNER INFORMATION:**  
OWNER: CITY OF FORT LAUDERDALE  
CONTACT: RICK JOHNSON  
PHONE: 954-828-7865

**PROPERTY LOCATION:**  
TOWNSHIP: 50S  
RANGE: 42E  
SECTION: 03  
LATITUDE: 26° 7' 51" N  
LONGITUDE: 80° 8' 46" W

**FLOOD ELEVATION:**  
100-YEAR FLOOD ELEV. = 6.0 (NAV 88)  
SOURCE: BROWARD COUNTY FEMA FLOOD MAPS

**NEW FLOOD ZONE:** AH

**NEW FLOOD PANEL:** 12011C0369H



HAZEN AND SAWYER  
4000 HOLLYWOOD BLVD., SUITE 7500  
FORT LAUDERDALE, FLORIDA 33309  
CERTIFICATE OF AUTHORIZATION NO.: 2771

DATE:	07/15/11
DRAWN BY:	GHD
DESIGNED BY:	MWW
CHECKED BY:	MWW
FIELD BOOK:	N/A

CITY OF FORT LAUDERDALE  
PUBLIC WORKS DEPARTMENT  
ENGINEERING & ARCHITECTURE  
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

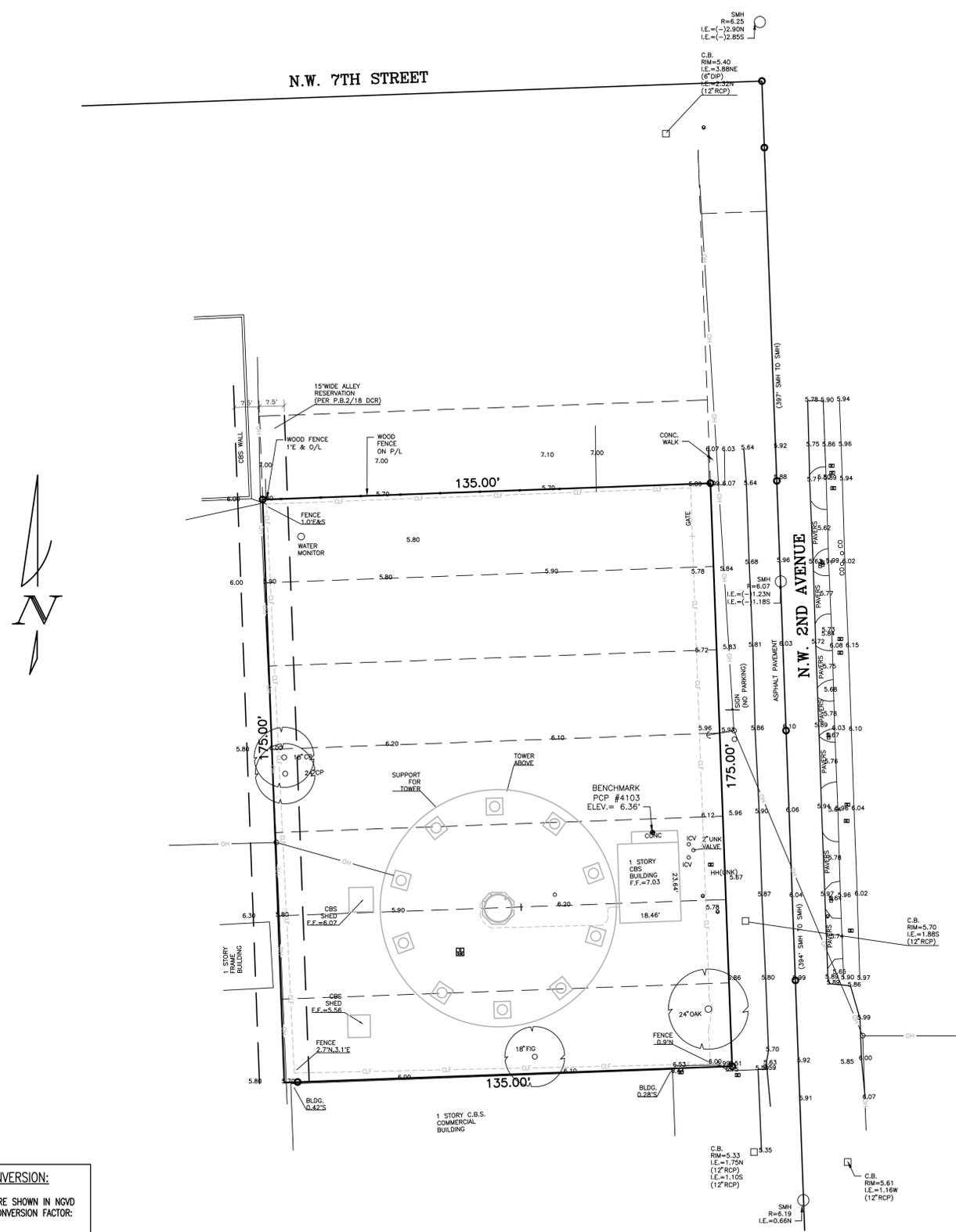
NO.	DATE	REVISIONS	
		BY	DESCRIPTION
1	01/28/2017	SJS	MWW BIDDING

PROJECT # 11887  
NW 2ND AVENUE TANK RESTORATION  
AERIAL PHOTO

SHEET NO.	OF
G-3	05
TOTAL:	31
CAD FILE:	11887-G03-030FOTO
DRAWING FILE NO.	WS-00-0015



# BOUNDARY & TOPOGRAPHIC SURVEY 2ND AVENUE TANK SITE



**SURVEY NOTES**

1. REPRODUCTIONS OF THIS SKETCH ARE NOT VALID UNLESS SEALED WITH THE EMBOSSED SEAL OF THE SURVEYOR WHOSE NAME APPEARS BELOW.
2. ACCORDING TO OWNERSHIP AND EASEMENT SEARCH PREPARED BY CHICAGO TITLE INSURANCE COMPANY, THE PROPERTY SURVEYED HAS NO RECORDED EASEMENT ENCUMBRANCES. LOT 4 (CONTIGUOUS TO THE NORTH) IS SUBJECT TO EASEMENTS CONTAINED IN DECLARATION OF COVENANTS, CONDITIONS AND RESTRICTIONS FOR OLD PROGRESSO VILLAGE RECORDED IN O.R.B. 35837/811 AND AMENDED IN O.R.B. 37978/878
3. THE LAND DESCRIPTION IS PER THE INSTRUMENT OF RECORD (PLAT).
4. ELEVATIONS SHOWN ARE BASED ON THE NATIONAL GEODETIC VERTICAL DATUM OF 1929. BENCHMARK DESCRIPTION: CITY OF FT. LAUDERDALE BM#1879 = ELEVATION 7.953
5. ABBREVIATIONS: I.R.W./CAP = IRON ROD WITH SURVEYOR'S CAP; McL = McLAUGHLIN ENGINEERING; ELEV. = ELEVATION; F.F. = FINISHED FLOOR; ELEC = OVERHEAD WIRES; UP = UTILITY POLE; ANCHOR = ANCHOR; CLF = CHAIN LINK FENCE; I.R. = IRON ROD; I.P. = IRON PIPE; PCP = PERMANENT CONTROL POINT; WV = WATER VALVE; UNK. = UNKNOWN; HH = HANDHOLE; ICV = IRRIGATION CONTROL VALVE; CB = CATCH BASIN; I.E. = INVERT ELEVATION; RCP = REINFORCED CONCRETE PIPE; DIP = DUCTILE IRON PIPE; AVA = AVACADO TREE; CP = CABBAGE PALM; WM = WATER METER; P/L = PROPERTY LINE; O/S = OFFSET; SMH = SANITARY MANHOLE; CO = CLEANOUT; B = MAILBOX; P.B. = PLAT BOOK; O.R.B. = OFFICIAL RECORDS BOOK; O/L = ON LINE

**DESCRIPTION:**

LOTS 5 THROUGH 11, INCLUSIVE, BLOCK 321, PROGRESSO, ACCORDING TO THE PLAT THEREOF AS RECORDED IN PLAT BOOK 2, PAGE 18 OF THE PUBLIC RECORDS OF MIAMI-DADE COUNTY, FLORIDA.  
SAID LANDS LYING IN THE CITY OF FORT LAUDERDALE, BROWARD COUNTY, FLORIDA.

**CERTIFICATION**

I HEREBY CERTIFY THAT THE ATTACHED BOUNDARY AND TOPOGRAPHIC SURVEY OF THE HEREON DESCRIBED PROPERTY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AS SURVEYED IN THE FIELD UNDER MY DIRECTION ON MAY 12, 2008.

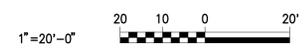
KATHLEEN L. HALL, P.L.S.  
FLORIDA REGISTRATION NO. 4103  
FLORIDA L.B. #6555  
KATHLEEN L. HALL LAND SURVEYING, INC.  
5499 N. FEDERAL HIGHWAY, STE. N  
BOCA RATON, FL. 33487  
(561) 443-0426

**NOTE:**

1. PLEASE REFER TO UPDATED SURVEY ON SP-1.

**NGVD 1929 TO NAVD 1988 CONVERSION:**  
ALL EXISTING AND PROPOSED ELEVATIONS ARE SHOWN IN NGVD 1929. THE FOLLOWING ILLUSTRATES THE CONVERSION FACTOR:

NGVD 1929
1.50'
NAVD 1988



State of Florida  
Professional Surveyor  
License No. 4103

DATE: 06/11/08  
DRAWN BY: K. HALL  
DESIGNED BY: K. HALL  
CHECKED BY: W. HALL  
FIELD BOOK: 106

**CITY OF FORT LAUDERDALE**  
PUBLIC WORKS DEPARTMENT  
ENGINEERING & ARCHITECTURE

100 North Andrews Avenue, Fort Lauderdale, Florida 33301

NO.	DATE	BY	REVISIONS	
			CH'D	DESCRIPTION
1	01/28/2017	SJS	MW	BIDDING

**PROJECT # 11887**  
**NW 2ND AVENUE TANK RESTORATION**  
**BOUNDARY AND TOPOGRAPHIC SURVEY**

SHEET NO. **G-4** OF **05**  
TOTAL: 31  
CAD FILE: 11887-G04-030BSRV  
DRAWING FILE NO. WS-00-0015







HAZEN AND SAWYER  
 4000 HOLLYWOOD BLVD., SUITE 750N  
 HOLLYWOOD, FLORIDA 33024  
 CERTIFICATE OF AUTHORIZATION NO. : 2771

State of Florida  
 Professional Engineer  
 License No. 34639  
 MICHAEL W.  
 WENGRENOWICH

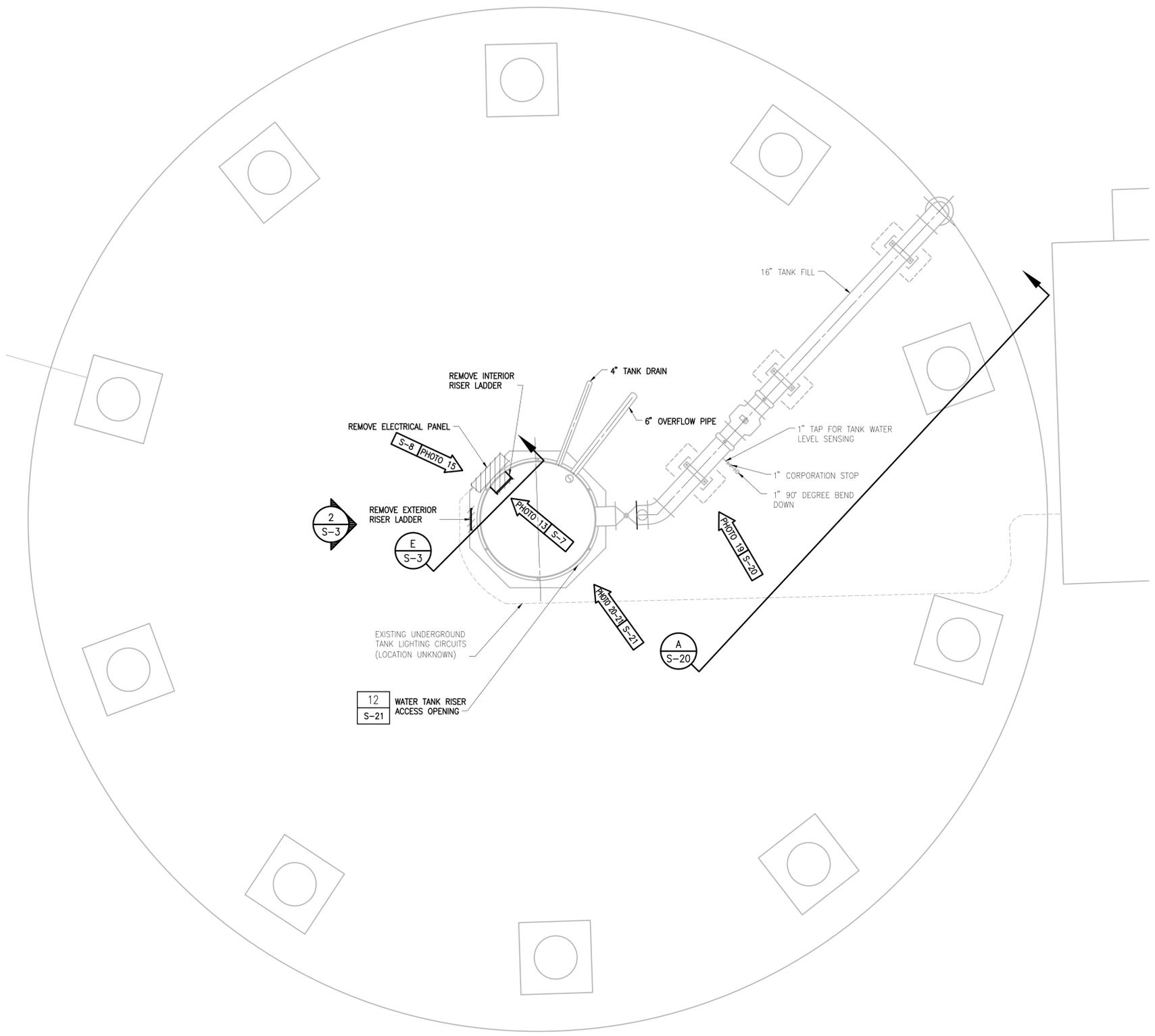
DRAWN BY: JAK/GHD  
 DESIGNED BY: MMW  
 CHECKED BY: MMW  
 FIELD BOOK: N/A  
 DATE: 07/15/11  
 SCALE: 1/4" = 1'-0"

CITY OF FORT LAUDERDALE  
 PUBLIC WORKS DEPARTMENT  
 ENGINEERING & ARCHITECTURE  
 100 North Andrews Avenue, Fort Lauderdale, Florida 33301

REVISIONS		DATE	BY	CHK'D	DESCRIPTION
NO.	1	01/28/2017	SJS	MMW	BIDDING

PROJECT # 11887  
 NW 2ND AVENUE TANK RESTORATION  
 TANK DEMOLITION  
 GROUND LEVEL PLAN

SHEET NO. OF  
**S-2** 21  
 TOTAL: 31  
 CAD FILE:  
 11887-S02-030PLAN  
 DRAWING FILE NO.  
 WS-00-0015

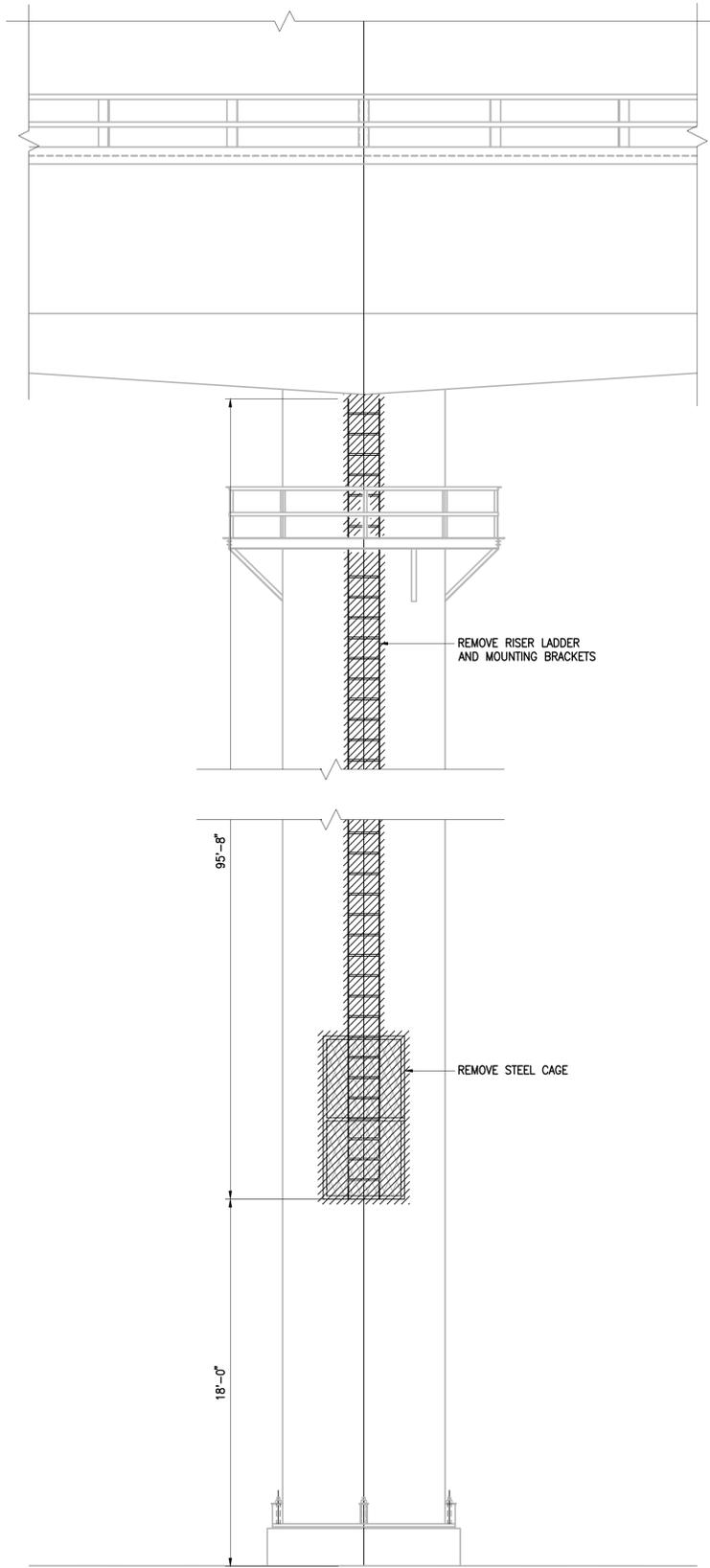


LEGEND:  
 ——— EXISTING  
 - - - - PROPOSED  
 [Hatched Box] TO BE REMOVED

ALL EXISTING DIMENSIONS ARE APPROXIMATE  
 BASED ON THE 1950 TANK DRAWINGS

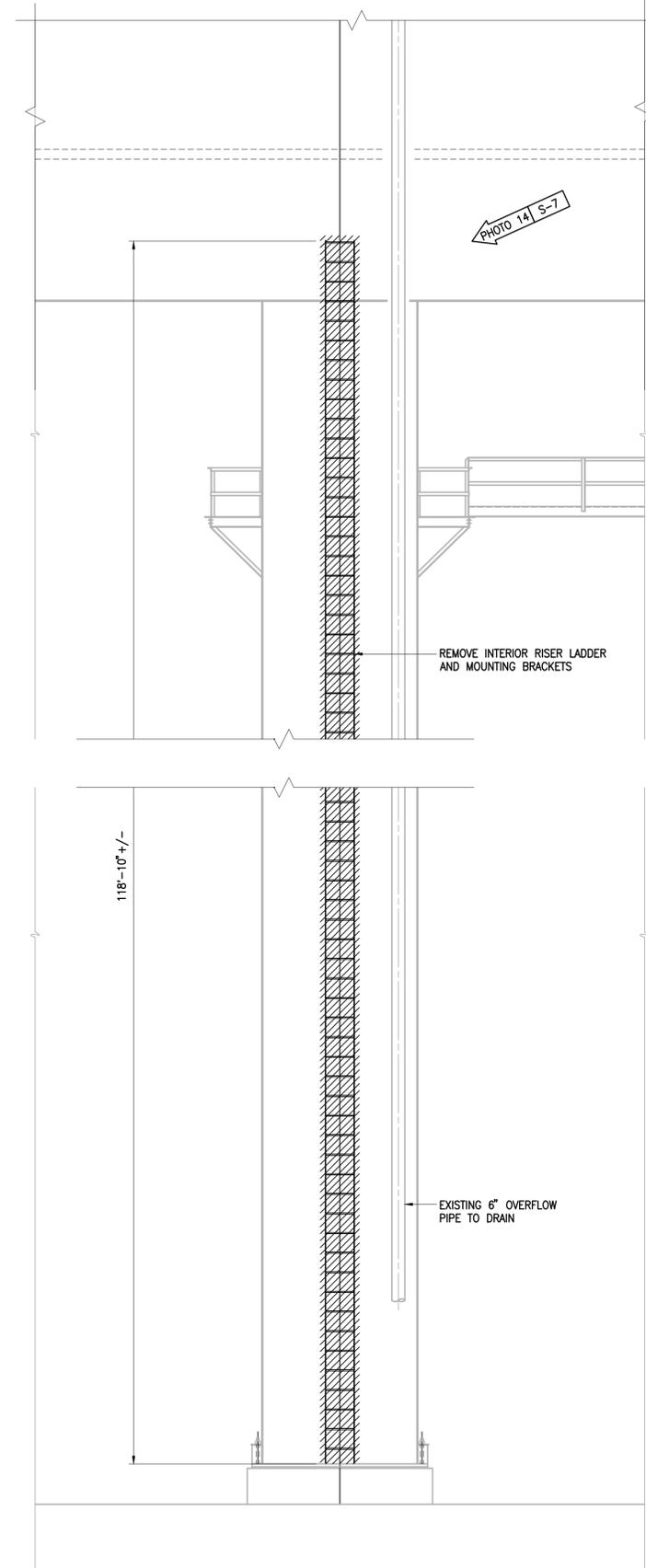


PLOT DATE: 1/30/2017 5:10 PM BY: CALI-10



EXTERIOR RISER LADDER  
VIEW 2  
1/4" = 1'-0" S-2

ALL EXISTING DIMENSIONS ARE APPROXIMATE  
BASED ON THE 1950 TANK DRAWINGS



INTERIOR RISER LADDER  
SECTION E  
1/4" = 1'-0" S-2

LEGEND:

— EXISTING

▨ TO BE REMOVED

1/4" = 1'-0"



HAZEN AND SAWYER  
4000 HOLLYWOOD BLVD., SUITE 7500  
FORT LAUDERDALE, FLORIDA 33309  
CERTIFICATE OF AUTHORIZATION NO. : 2771

DRAWN BY:	JAK/GHD	DATE:	07/15/11
DESIGNED BY:	MWW	SCALE:	1/4" = 1'-0"
CHECKED BY:	MWW	FIELD BOOK:	N/A

CITY OF FORT LAUDERDALE  
PUBLIC WORKS DEPARTMENT  
ENGINEERING & ARCHITECTURE  
100 North Andrews Avenue, Fort Lauderdale, Florida, 33301

NO.	DATE	BY	CHK'D	REVISIONS	
				DESCRIPTION	BIDDING
1	01/28/2017	SJS	MWW		

PROJECT # 11887  
NW 2ND AVENUE TANK RESTORATION  
TANK DEMOLITION  
CYLINDER RISER LADDERS

SHEET NO.	OF
<b>S-3</b>	<b>21</b>
TOTAL:	31
CAD FILE:	11887-S03-030DETL
DRAWING FILE NO.	WS-00-0015



PHOTO 1 - RISER ANCHOR BOLT  
NTS

**NOTE:**

1. SEE SHEET S-11 FOR REHABILITATION OF RISER ANCHOR BOLTS.



PHOTO 2 - EXTERIOR LADDER AT RISER WALKWAY  
NTS

REMOVE RISER LADDER AND MOUNTING BRACKETS

ACCESS HATCH TO REMAIN



PHOTO 3 - EXTERIOR RISER LADDER  
NTS

REMOVE RISER LADDER AND MOUNTING BRACKETS

REMOVE SECURITY CAGE



PHOTO 4 - EXTERIOR LADDER CAGE  
NTS

REMOVE SECURITY CAGE

**LEGEND:**  
 EXISTING  
 TO BE REMOVED



HAZEN AND SAWYER  
 PROFESSIONAL ENGINEERS AND ARCHITECTS  
 4000 HOLLYWOOD BLVD., SUITE 7500  
 MIAMI, FLORIDA 33140  
 CERTIFICATE OF AUTHORIZATION NO. : 2771

State of Florida  
 Professional Engineer  
 License No. 34639  
 MICHAEL W.  
 WENGRENOWICH

DATE:	07/15/11
DRAWN BY:	GHD
DESIGNED BY:	SCALE: N/A
CHECKED BY:	MWW
FIELD BOOK:	N/A

**CITY OF FORT LAUDERDALE**  
 PUBLIC WORKS DEPARTMENT  
 ENGINEERING & ARCHITECTURE  
 100 North Andrews Avenue, Fort Lauderdale, Florida 33301

NO.	DATE	BY	CHK'D	DESCRIPTION
1	01/28/2017	SIS	MWW	BIDDING

**PROJECT # 11887**  
**NW 2ND AVENUE TANK RESTORATION**  
**TANK DEMOLITION**  
**PHOTOS SHEET 1**

SHEET NO.	OF
<b>S-4</b>	<b>21</b>
TOTAL:	31
CAD FILE:	11887-S04-030FOTO
DRAWING FILE NO.	WS-00-0015

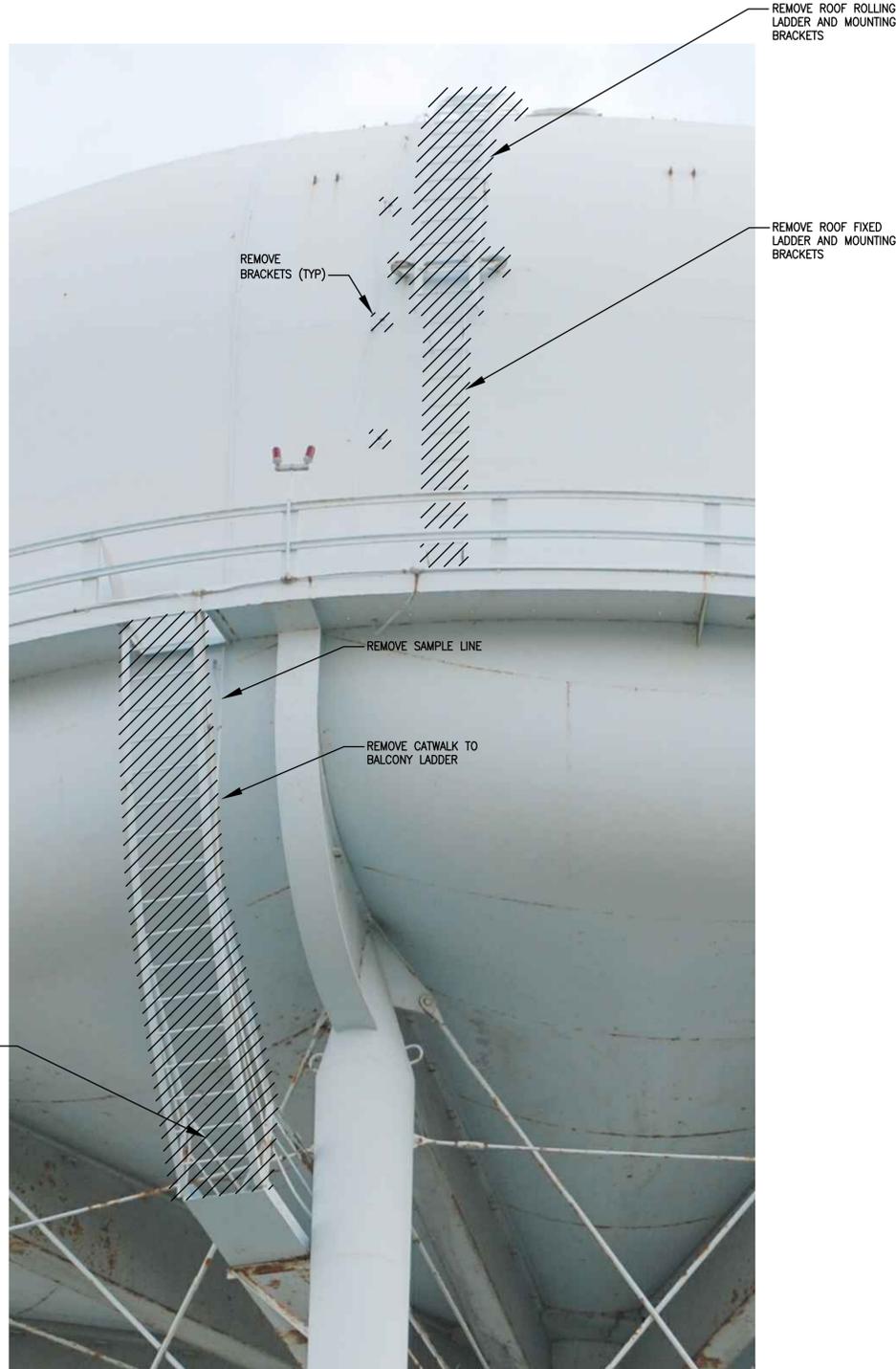


PHOTO 5 - CATWALK TO BALCONY LADDER AND ROOF LADDER  
NTS



PHOTO 6 - CATWALK TO BALCONY LADDER  
NTS

**LEGEND:**  
 \_\_\_\_\_ EXISTING  
 [Hatched Box] TO BE REMOVED



HAZEN AND SAWYER  
 PROFESSIONAL ENGINEERS  
 4000 HOLLYWOOD BLVD., SUITE 7500  
 FORT LAUDERDALE, FLORIDA 33309  
 CERTIFICATE OF AUTHORIZATION NO. : 2771

State of Florida  
 Professional Engineer  
 License No. 34639  
 MICHAEL W.  
 WENGRENOVICH

DATE:	07/15/11
DRAWN BY:	JAK/GHD
DESIGNED BY:	MMW
CHECKED BY:	MMW
SCALE:	N/A
FIELD BOOK:	N/A

**CITY OF FORT LAUDERDALE**  
 PUBLIC WORKS DEPARTMENT  
 ENGINEERING & ARCHITECTURE  
 100 North Andrews Avenue, Fort Lauderdale, Florida 33301

NO.	DATE	BY	REVISIONS		DESCRIPTION
			CHK'D	DATE	
1	01/28/2017	SIS	MMW	BIDDING	

**PROJECT # 11887**  
**NW 2ND AVENUE TANK RESTORATION**  
**TANK DEMOLITION**  
**PHOTOS SHEET 2**

SHEET NO.	OF
<b>S-5</b>	<b>21</b>
TOTAL:	31
CAD FILE:	11887-S05-030FOTO
DRAWING FILE NO.	WS-00-0015



REMOVE EXISTING CONDUIT

PHOTO 7 - CONDUIT AT BALCONY LADDER  
NTS



DEMOLISH ROOF ACCESS HATCH. ENLARGE OPENING FOR NEW ROOF ACCESS HATCH

REMOVE ROOF LADDER

PHOTO 8 - ROOF ACCESS HATCH  
NTS



REMOVE ROOF VENT

PHOTO 9 - ROOF VENT  
NTS



REMOVE ROOF ROLLING LADDER AND MOUNTING BRACKETS

REMOVE OBSTRUCTION LIGHT CONDUIT AND BRACKETS (SEE NOTE 1)

PHOTO 10 - ROOF LADDER AND AIRCRAFT LIGHT  
NTS

NOTE:  
1. OBSTRUCTION LIGHTS MUST REMAIN ENERGIZED AND FUNCTIONAL AT ALL TIMES.

LEGEND:

- EXISTING
- ▨ TO BE REMOVED



HAZEN AND SAWYER  
4000 HOLLWOOD BOULEVARD, SUITE 7500  
PALM BEACH, FLORIDA 33409  
CERTIFICATE OF AUTHORIZATION NO. : 2771

State of Florida  
Professional Engineer  
License No. 34639  
  
MICHAEL W.  
WENGROVICH

DATE: 07/15/11  
DRAWN BY: JAK/GHD  
DESIGNED BY: SCALE: N/A  
CHECKED BY: MMW  
FIELD BOOK: N/A

**CITY OF FORT LAUDERDALE**  
PUBLIC WORKS DEPARTMENT  
ENGINEERING & ARCHITECTURE  
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

NO.	REVISIONS		DESCRIPTION
	DATE	BY	
1	01/29/2017	SIS	MMW BIDDING

PROJECT # 11887  
NW 2ND AVENUE TANK RESTORATION  
TANK DEMOLITION  
PHOTOS SHEET 3

SHEET NO.	OF
<b>S-6</b>	<b>21</b>
TOTAL:	31
CAD FILE:	11887-S06-030FOTO
DRAWING FILE NO.	WS-00-0015



HAZEN AND SAWYER  
 4000 HOLLWOOD BOULEVARD, SUITE 750N  
 FORT LAUDERDALE, FLORIDA 33309  
 CERTIFICATE OF AUTHORIZATION NO. : 2771

State of Florida  
 Professional Engineer  
 License No. 34639

DATE: 07/15/11  
 DRAWN BY: JAK/GHD  
 DESIGNED BY: SCALE: N/A  
 CHECKED BY: MWW  
 FIELD BOOK: N/A

**CITY OF FORT LAUDERDALE**  
 PUBLIC WORKS DEPARTMENT  
 ENGINEERING & ARCHITECTURE  
 100 North Andrews Avenue, Fort Lauderdale, Florida 33301

NO.	DATE	BY	CHK'D	REVISIONS	
				DESCRIPTION	BIDDING
1	01/29/2017	SIS	MWW		

**PROJECT # 11887**  
**NW 2ND AVENUE TANK RESTORATION**  
**TANK DEMOLITION**  
**PHOTOS SHEET 4**

SHEET NO.	OF
<b>S-7</b>	<b>21</b>
TOTAL:	31
CAD FILE:	11887-S07-030FOTO
DRAWING FILE NO.	WS-00-0015



PHOTO 11 – TANK INTERIOR LADDER TOP BRACE  
 NTS

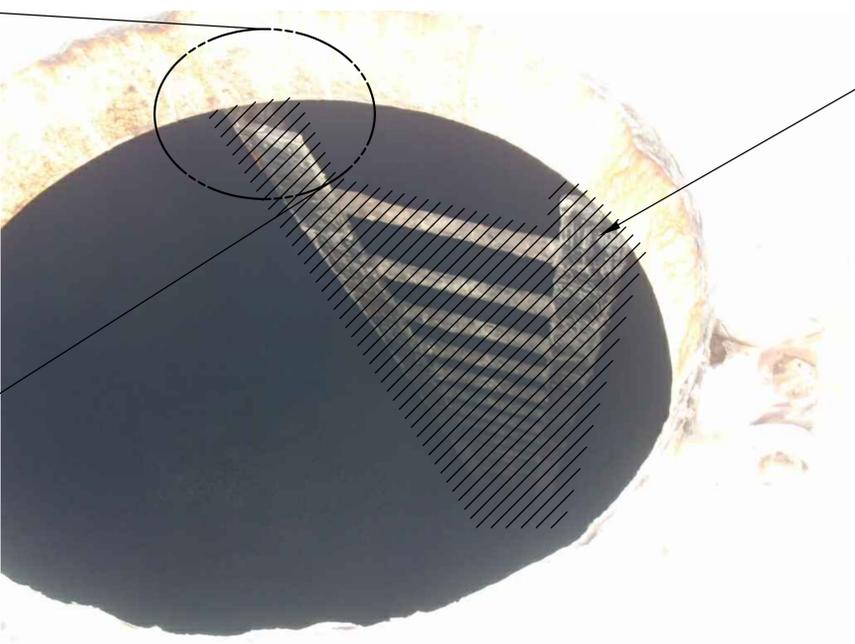


PHOTO 12 – TANK INTERIOR LADDER AT ROOF ACCESS HATCH  
 NTS



PHOTO 13 – INTERIOR LADDER BASE  
 NTS

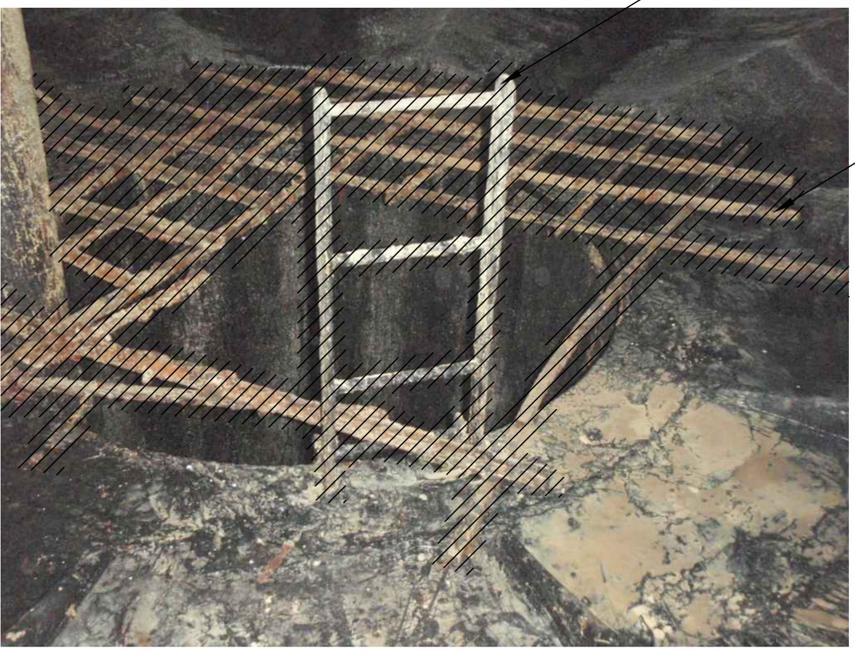


PHOTO 14 – RISER GRATE AND INTERIOR RISER LADDER  
 NTS

REMOVE INTERIOR RISER LADDER AND MOUNTING BRACKETS

REMOVE INTERIOR RISER LADDER AND MOUNTING BRACKETS

REMOVE EXISTING RISER GRATE

**LEGEND:**  
 \_\_\_\_\_ EXISTING  
 TO BE REMOVED



PHOTO 15 – ELECTRICAL PANEL  
NTS



PHOTO 16 – INSIDE ELECTRICAL PANEL  
NTS



PHOTO 17 – TANK SIGN LIGHTING  
NTS

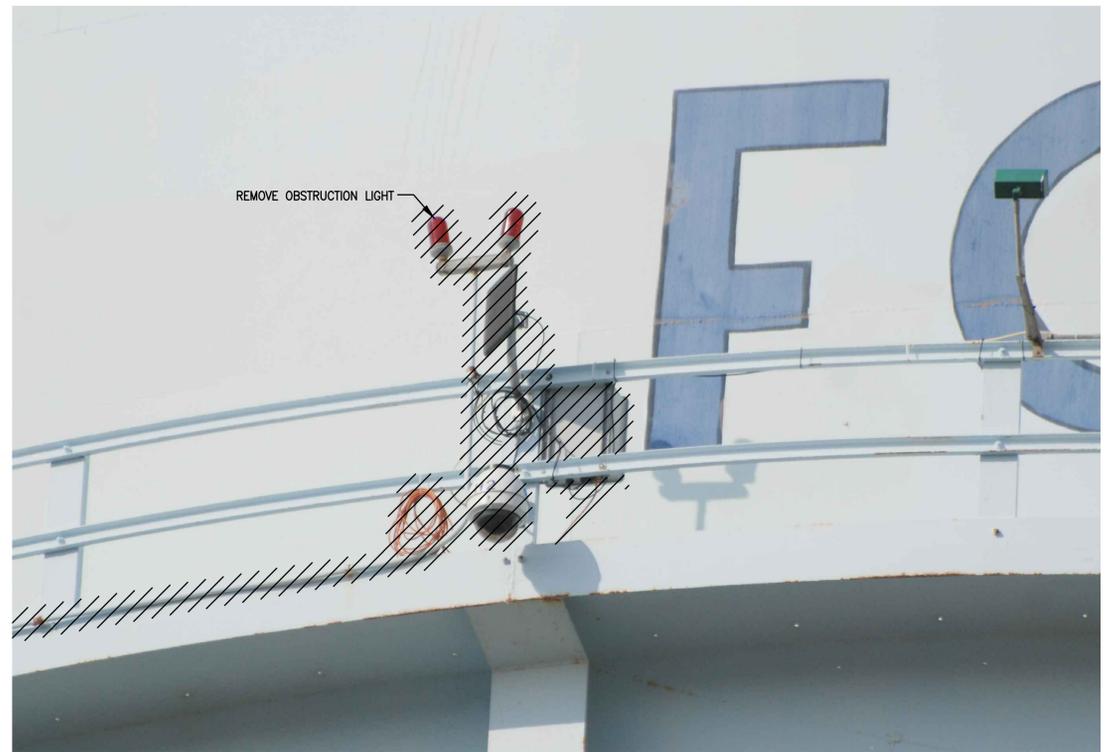


PHOTO 18 – OBSTRUCTION LIGHTING  
NTS

**LEGEND:**  
 \_\_\_\_\_ EXISTING  
 // TO BE REMOVED

**Hazen**  
 HAZEN AND SAWYER  
 4000 HOLLYWOOD BOULEVARD, SUITE 750N  
 HOLLYWOOD, FLORIDA 33061  
 CERTIFICATE OF AUTHORIZATION NO. : 2771

State of Florida  
 Professional Engineer  
 License No. 34639  
 MICHAEL W.  
 WENGRONOVICH

DATE: 07/15/11  
 DRAWN BY: GHD  
 DESIGNED BY: SCALE: NTS  
 CHECKED BY: MWW  
 FIELD BOOK: N/A

**CITY OF FORT LAUDERDALE**  
 PUBLIC WORKS DEPARTMENT  
 ENGINEERING & ARCHITECTURE  
 100 North Andrews Avenue, Fort Lauderdale, Florida 33301

NO.	DATE	REVISIONS		DESCRIPTION
		BY	CHK'D	
1	01/28/2017	SIS	MWW	BIDDING

**PROJECT # 11887**  
**NW 2ND AVENUE TANK RESTORATION**  
**TANK DEMOLITION**  
**PHOTOS SHEET 5**

SHEET NO.	OF
<b>S-8</b>	<b>21</b>
TOTAL:	31
CAD FILE:	11887-S08-030FOTO
DRAWING FILE NO.	WS-00-0015



HAZEN AND SAWYER  
4000 HOLLYWOOD BLVD., SUITE 7500  
FORT LAUDERDALE, FLORIDA 33301  
CERTIFICATE OF AUTHORIZATION NO. : 2771

State of Florida  
Professional Engineer  
License No. 34639  
MICHAEL W.  
WENGRENOVICH

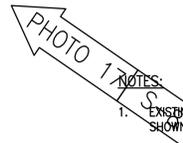
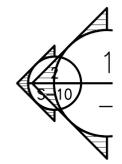
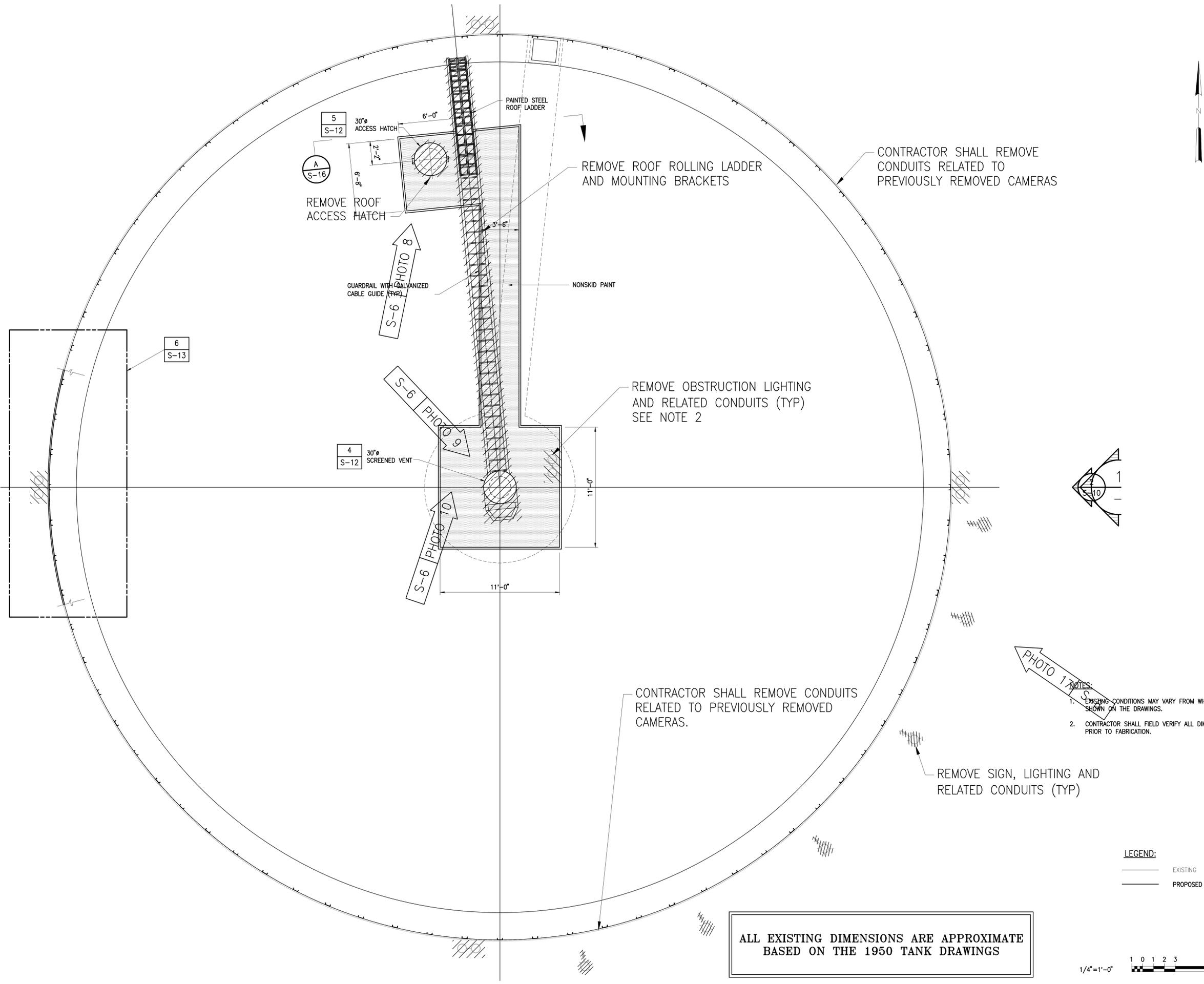
DATE: 07/15/11  
DRAWN BY: JAK/GHD  
DESIGNED BY: SCALE: 1/4" = 1'-0"  
CHECKED BY: MWW  
FIELD BOOK: N/A

CITY OF FORT LAUDERDALE  
PUBLIC WORKS DEPARTMENT  
ENGINEERING & ARCHITECTURE  
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

NO.	DATE	BY	CHK'D	REVISIONS	
				DESCRIPTION	BIDDING
1	01/28/2017	SJS	MWW		

PROJECT # 11887  
NW 2ND AVENUE TANK RESTORATION  
TANK  
ROOF PLAN

SHEET NO. OF  
**S-9** 21  
TOTAL: 31  
CAD FILE:  
11887-S09-030ELEV  
DRAWING FILE NO.  
WS-09-030ELEV



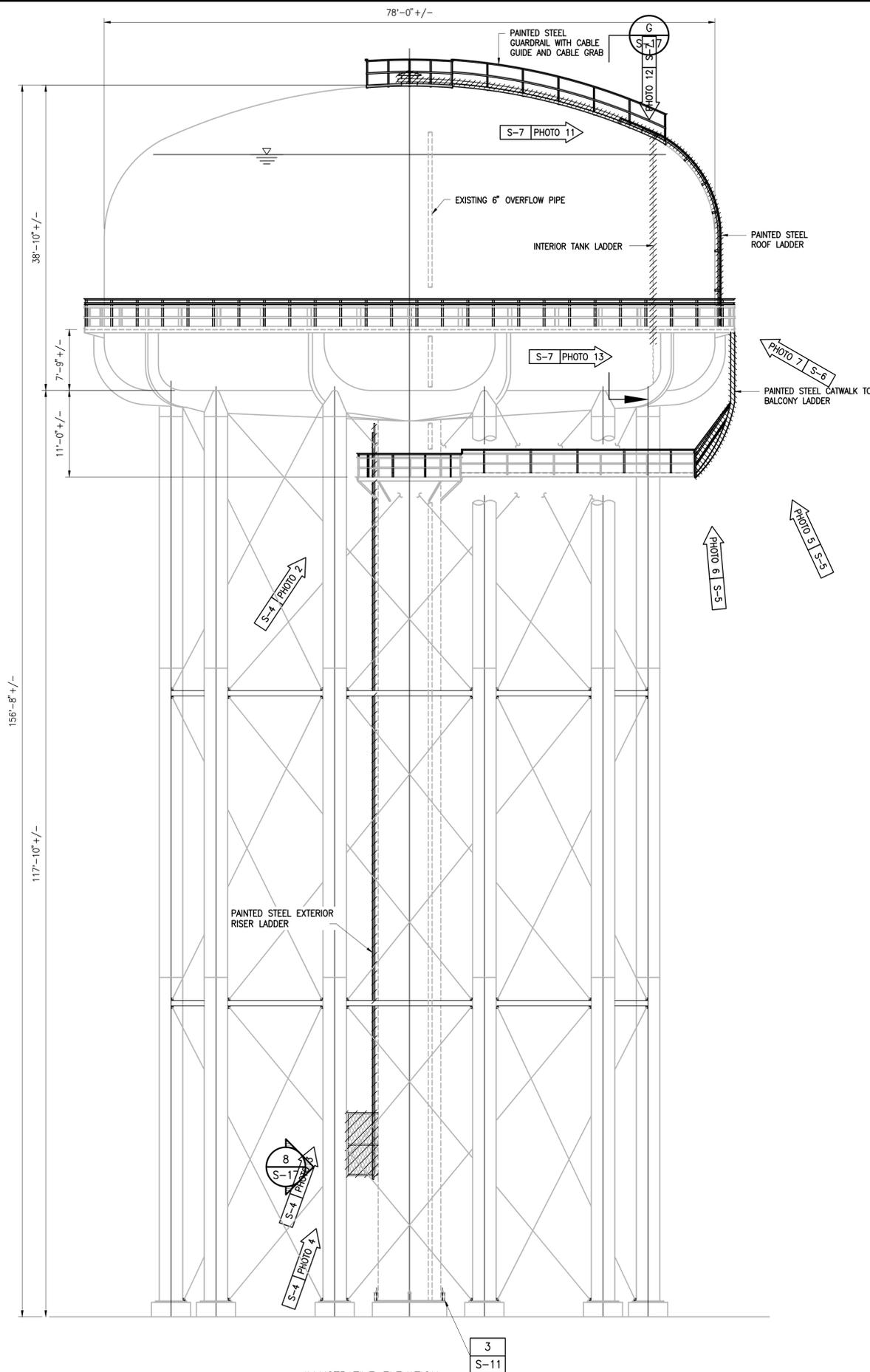
- NOTES:
- EXISTING CONDITIONS MAY VARY FROM WHAT IS SHOWN ON THE DRAWINGS.
  - CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS PRIOR TO FABRICATION.

LEGEND:  
— EXISTING  
— PROPOSED

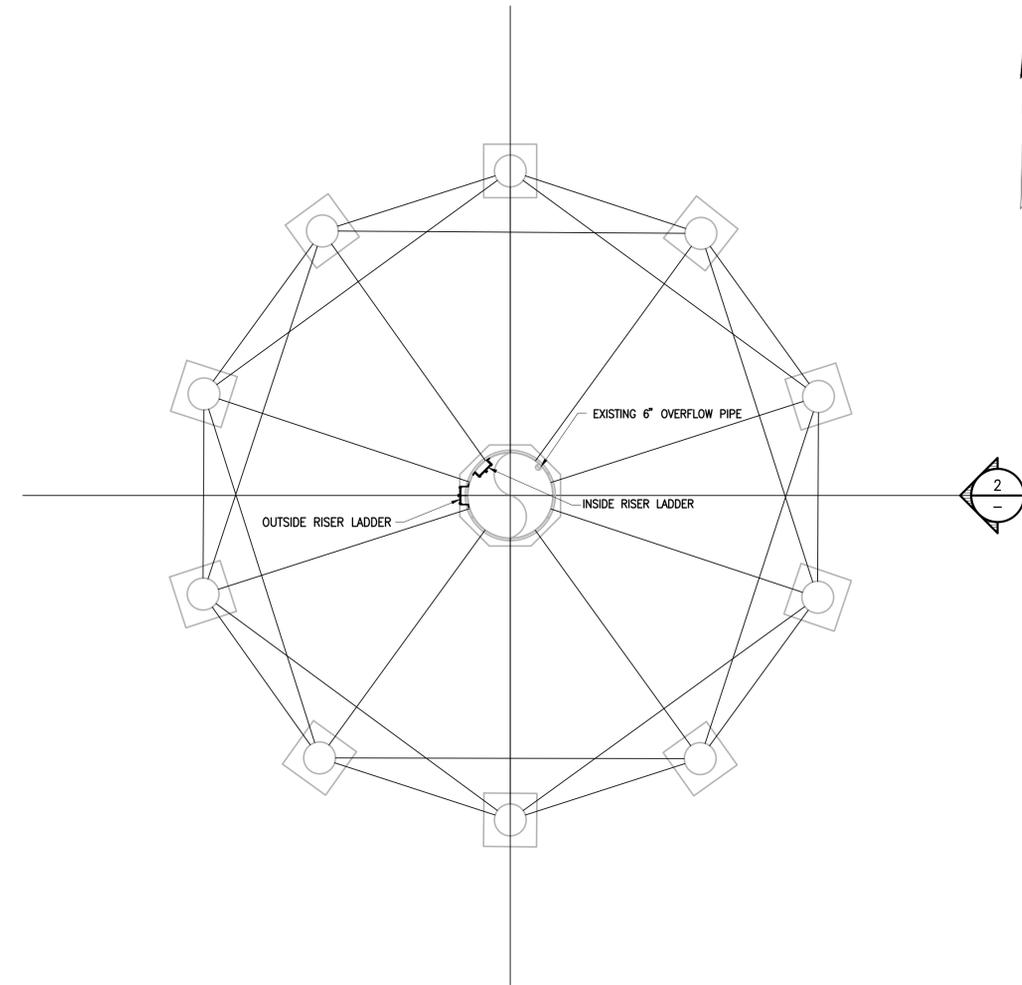


ALL EXISTING DIMENSIONS ARE APPROXIMATE  
BASED ON THE 1950 TANK DRAWINGS

PLOT DATE: 1/30/2017 5:10 PM BR: CAU-10



ILLUSTRATIVE ELEVATION  
VIEW 2  
1/8" = 1'-0"



EXISTING ROD PLAN  
1/8" = 1'-0"

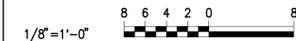
NOTE:

- 1. REFER TO ART LIGHT SPACE DRAWINGS FOR LIGHT BRACKET LOCATIONS AND DETAILS.

LEGEND:

- EXISTING
- PROPOSED

ALL EXISTING DIMENSIONS ARE APPROXIMATE  
BASED ON THE 1950 TANK DRAWINGS



Hazen and Sawyer  
Professional Engineer  
4000 HOLLYWOOD BLVD., SUITE 750  
HOLLYWOOD, FLORIDA 33024  
CERTIFICATE OF AUTHORIZATION NO. : 2771

State of Florida  
Professional Engineer  
License No. 34639  
MICHAEL W.  
WENGRENOVICH

DATE: 07/15/11  
DRAWN BY: JAK/GHD  
DESIGNED BY: SCALE: 1/8" = 1'-0"  
CHECKED BY: MWW  
FIELD BOOK: N/A

**CITY OF FORT LAUDERDALE**  
PUBLIC WORKS DEPARTMENT  
**ENGINEERING & ARCHITECTURE**  
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

REVISIONS		DESCRIPTION		
NO.	DATE	BY	CHK'D	DESCRIPTION
1	01/28/2017	SIS	MWW	BIDDING

PROJECT # 11887  
NW 2ND AVENUE TANK RESTORATION  
TANK  
ELEVATION AND ROD PLAN

SHEET NO.	OF
<b>S-10</b>	<b>21</b>
TOTAL:	31
CAD FILE:	11887-S10-030ELEV
DRAWING FILE NO.	WS-00-0015



HAZEN AND SAWYER  
 PROFESSIONAL ENGINEERS  
 4000 HOLLYWOOD BLVD., SUITE 750N  
 FORT LAUDERDALE, FLORIDA 33301  
 CERTIFICATE OF AUTHORIZATION NO. : 2771

State of Florida  
 Professional Engineer  
 License No. 34639

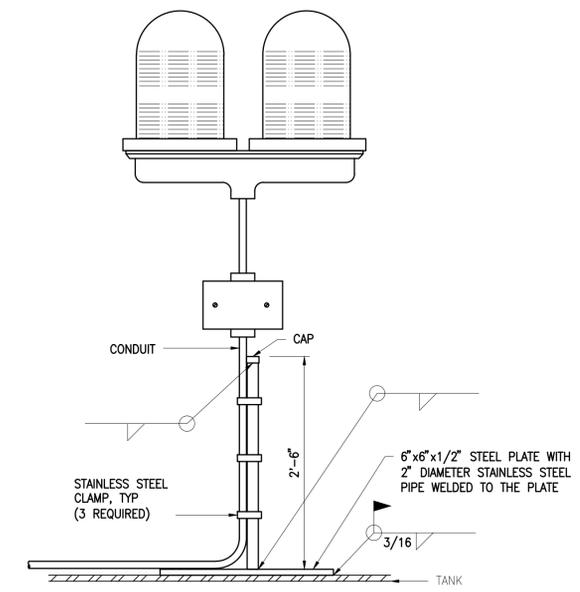
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 DESIGNED BY: SCALE: VARIOUS  
 CHECKED BY: MWV  
 FIELD BOOK: N/A

CITY OF FORT LAUDERDALE  
 PUBLIC WORKS DEPARTMENT  
 ENGINEERING & ARCHITECTURE  
 100 North Andrews Avenue, Fort Lauderdale, Florida 33301

REVISIONS		DATE	BY	CHK'D	DESCRIPTION
NO.	1	01/28/2017	S/S	MWV	BIDDING

PROJECT # 11887  
 NW 2ND AVENUE TANK RESTORATION  
 TANK  
 DETAILS

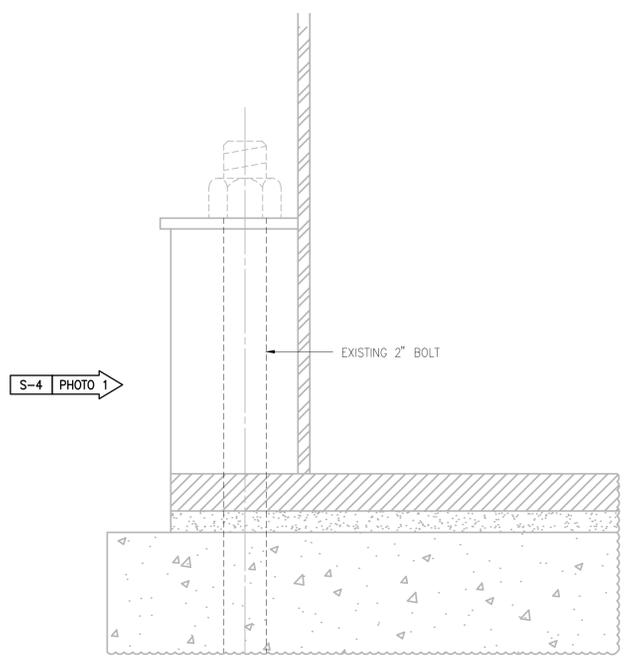
SHEET NO. OF  
**S-11** 21  
 TOTAL: 31  
 CAD FILE:  
 11887-S11-030DETL  
 DRAWING FILE NO.  
 WS-00-0015



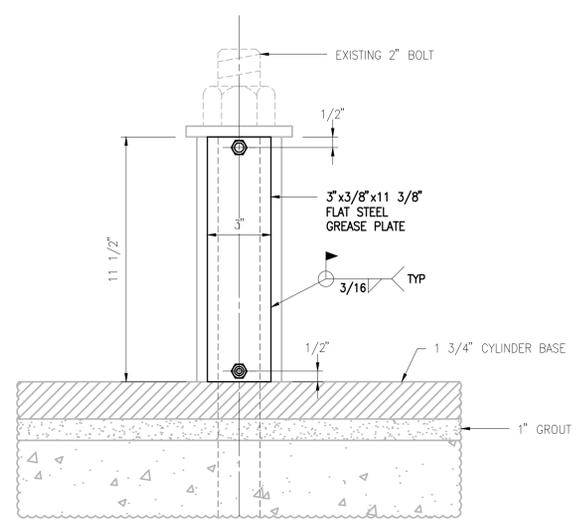
NOTE:  
 CONTRACTOR SHALL ADJUST DETAIL AS NECESSARY TO MEET FLORIDA BUILDING CODE WIND LOADING REQUIREMENTS. MAKE ALL NECESSARY CONNECTIONS AND MODIFICATIONS FOR A COMPLETE WORKING SYSTEM IN PLACE.

OBSTRUCTION LIGHT SUPPORT

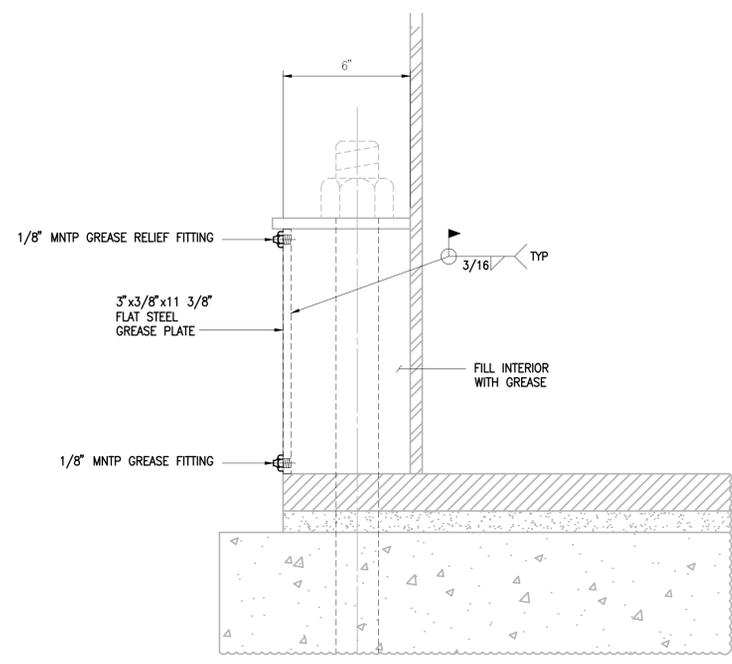
DETAIL	2
NTS	E-2



SIDE VIEW - EXISTING



FRONT VIEW - PROPOSED



SIDE VIEW - PROPOSED

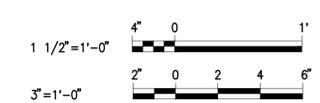
- NOTES:
1. ALL ANCHOR BOLTS ON RISER AND EACH COLUMN ARE TO HAVE GREASE PLATES ADDED.
  2. ALL SURFACES WITHIN AREA TO BE FILLED WITH GREASE SHALL BE SANDBLASTED TO WHITE METAL AND COATED WITH A RUST INHIBITOR.
  3. AREAS TO BE WELDED SHALL HAVE PAINT REMOVED PRIOR TO WELDING.
  4. TYPICAL OF 46 LOCATIONS.

GREASE PLATE DETAIL

DETAIL	3
3" = 1'-0"	S-10

ALL EXISTING DIMENSIONS ARE APPROXIMATE  
 BASED ON THE 1950 TANK DRAWINGS

LEGEND:  
 ——— EXISTING  
 ——— PROPOSED





HAZEN AND SAWYER  
 PROFESSIONAL ENGINEERS  
 4000 HOLLYWOOD BLVD., SUITE 750  
 MIAMI, FLORIDA 33140  
 CERTIFICATE OF AUTHORIZATION NO. : 2771

State of Florida  
 Professional Engineer  
 License No. 34939

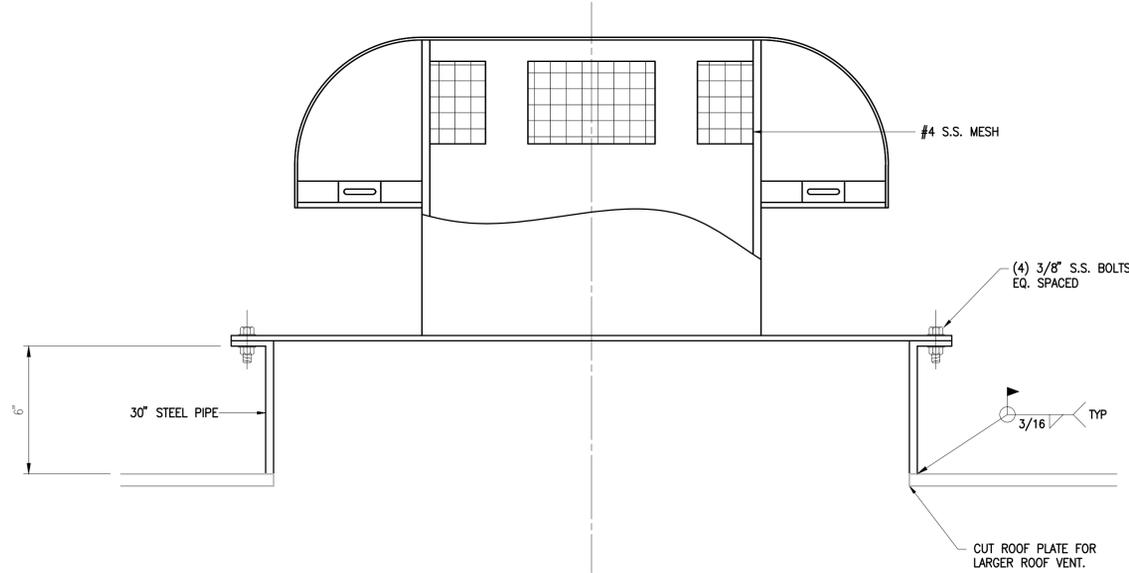
DATE: 07/15/11  
 DRAWN BY: JAK/GHD  
 DESIGNED BY: SCALE: 3" = 1'-0"  
 CHECKED BY: MWW  
 FIELD BOOK: N/A

CITY OF FORT LAUDERDALE  
 PUBLIC WORKS DEPARTMENT  
 ENGINEERING & ARCHITECTURE  
 100 North Andrews Avenue, Fort Lauderdale, Florida 33301

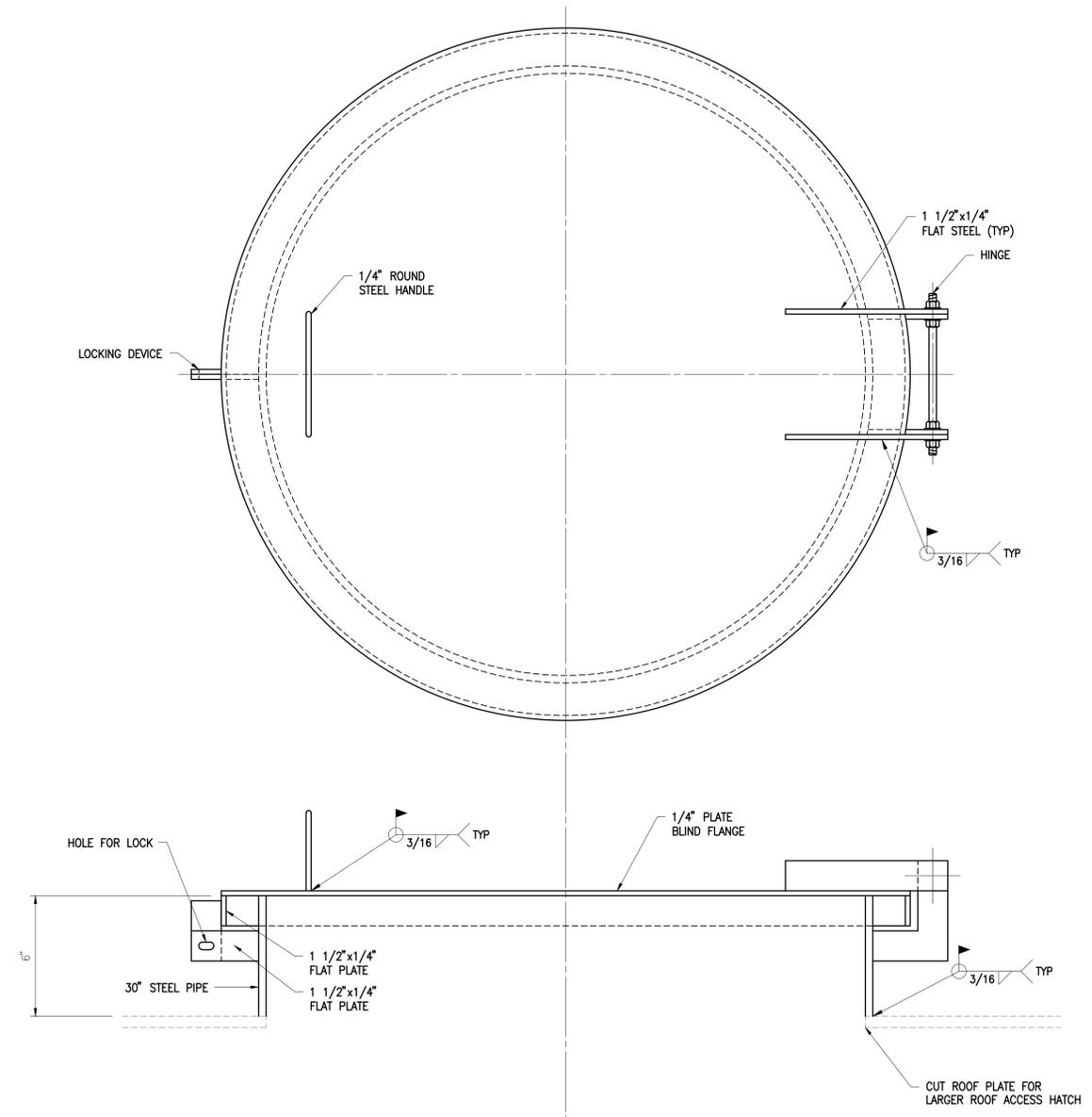
REVISIONS		DATE	BY	CHKD	DESCRIPTION
NO.	1	01/28/2017	SIS	MWW	BIDDING

PROJECT # 11887  
 NW 2ND AVENUE TANK RESTORATION  
 TANK  
 ROOF VENT AND ROOF HATCH

SHEET NO.	OF
<b>S-12</b>	<b>21</b>
TOTAL:	31
CAD FILE:	11887-S12-030DETL
DRAWING FILE NO.	WS-00-0015



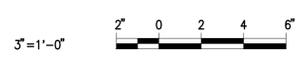
ROOF VENT  
 DETAIL 4  
 3" = 1'-0" S-9



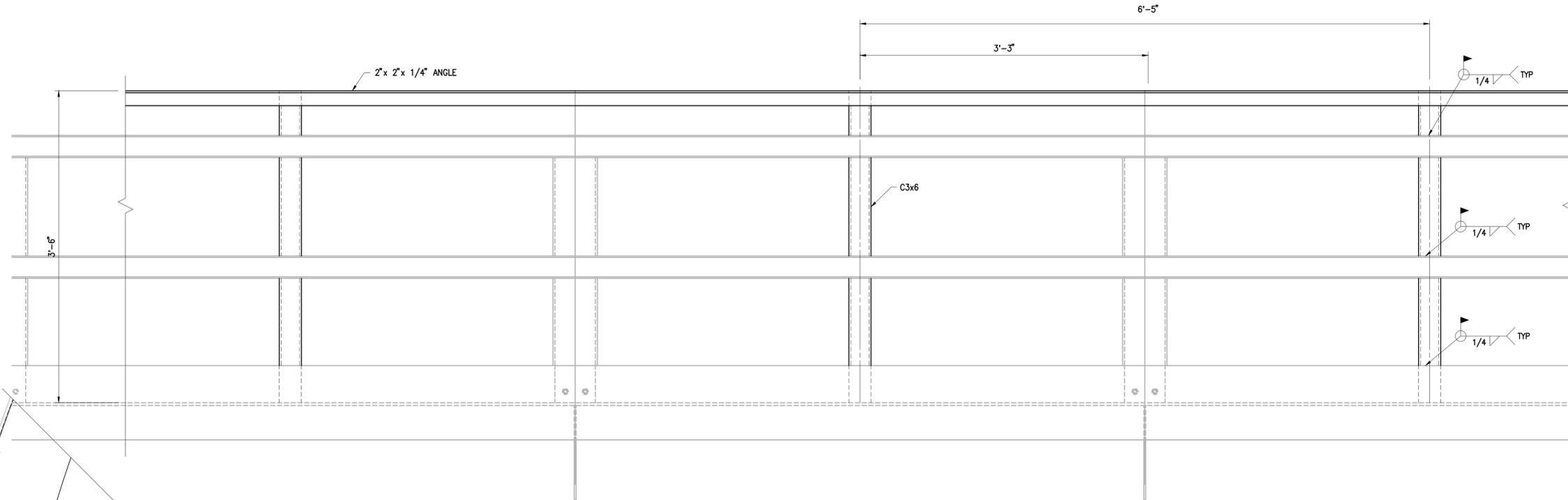
ROOF ACCESS HATCH  
 DETAIL 5  
 3" = 1'-0" S-9

NOTE:  
 FOR ACCESS HATCH AND ROOF VENT,  
 CONTRACTOR SHALL WELD PIPE OVER EXISTING  
 24" OPENING. ONCE WELDED, CONTRACTOR  
 SHALL CUT OUT EXCESS STEEL TO BECOME  
 FLUSH AND SMOOTH WITH PIPE.

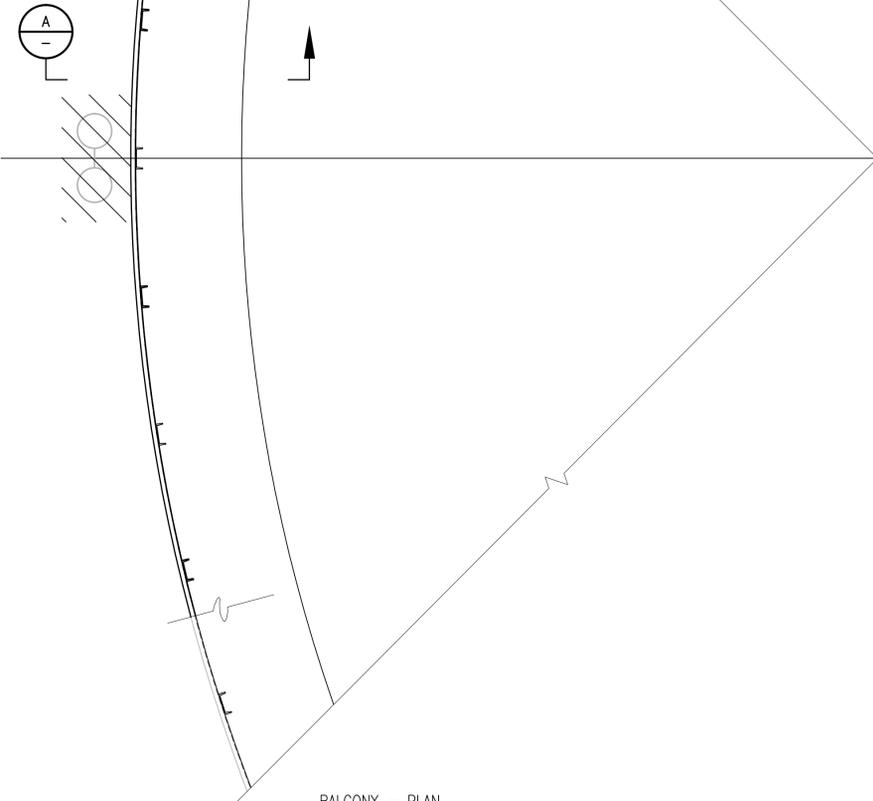
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 ——— EXISTING  
 ——— PROPOSED



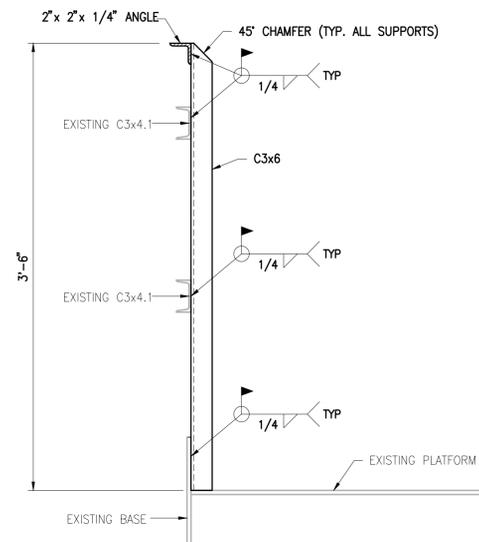
PLOT DATE: 1/30/2017 5:10 PM BR, CAL-10



BALCONY GUARDRAIL - ILLUSTRATIVE VIEW  
1 1/2" = 1'-0"



BALCONY - PLAN  
DETAIL 6  
1/2" = 1'-0" S-9



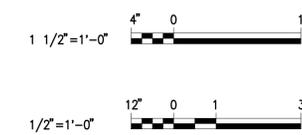
BALCONY SECTION  
SECTION A  
1 1/2" = 1'-0"

NOTES:

1. ALL WELDING TO BE DONE BY CONTRACTOR WITH E70XX ELECTRODES.
2. INSTALL VERTICAL POSTS AT MIDPOINT BETWEEN ALL EXISTING VERTICAL POSTS.
3. EXISTING CONDITIONS MAY VARY FROM WHAT IS SHOWN ON THE DRAWINGS.
4. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS PRIOR TO FABRICATION.

LEGEND:

- EXISTING
- PROPOSED



ALL EXISTING DIMENSIONS ARE APPROXIMATE  
BASED ON THE 1950 TANK DRAWINGS



HAZEN AND SAWYER  
1000 HOLLYWOOD BLVD., SUITE 750  
FORT LAUDERDALE, FLORIDA 33301  
CERTIFICATE OF AUTHORIZATION NO. : 2771

State of Florida  
Professional Engineer  
License No. 34939  
MICHAEL W.  
WENGRENOWICH

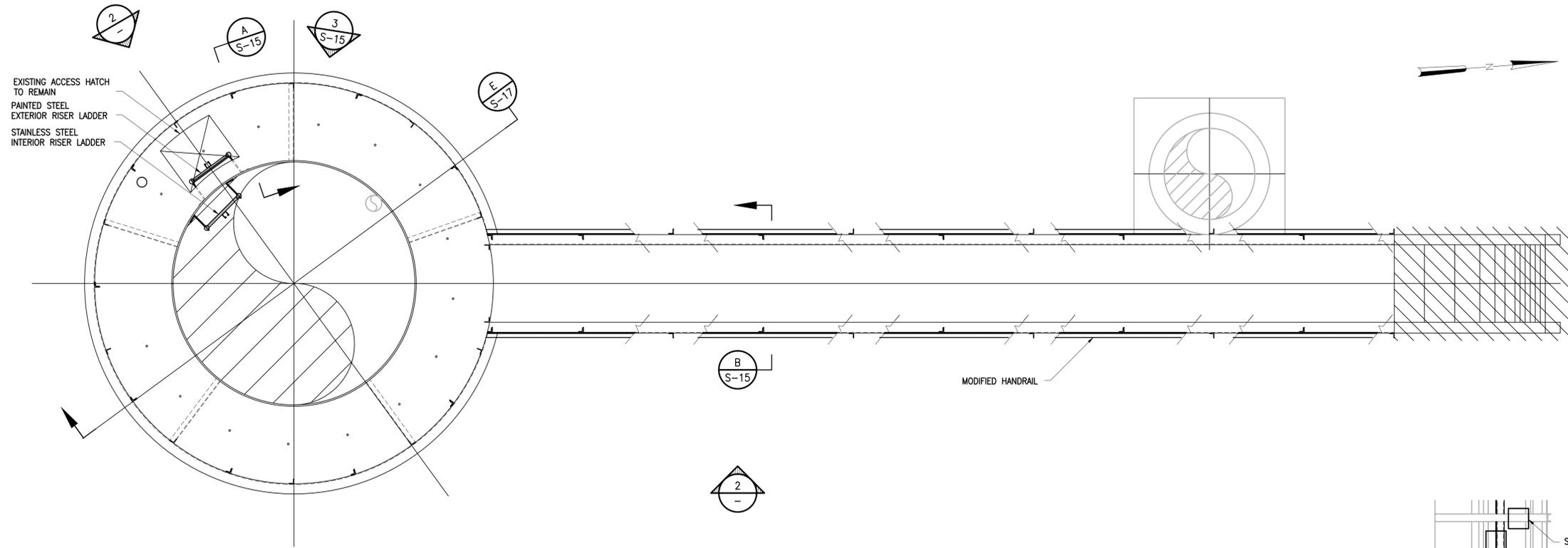
DRAWN BY:	DATE:
GHD	07/15/11
DESIGNED BY:	SCALE:
MWW	VARIOUS
CHECKED BY:	
MWW	
FIELD BOOK:	N/A

**CITY OF FORT LAUDERDALE**  
PUBLIC WORKS DEPARTMENT  
ENGINEERING & ARCHITECTURE  
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

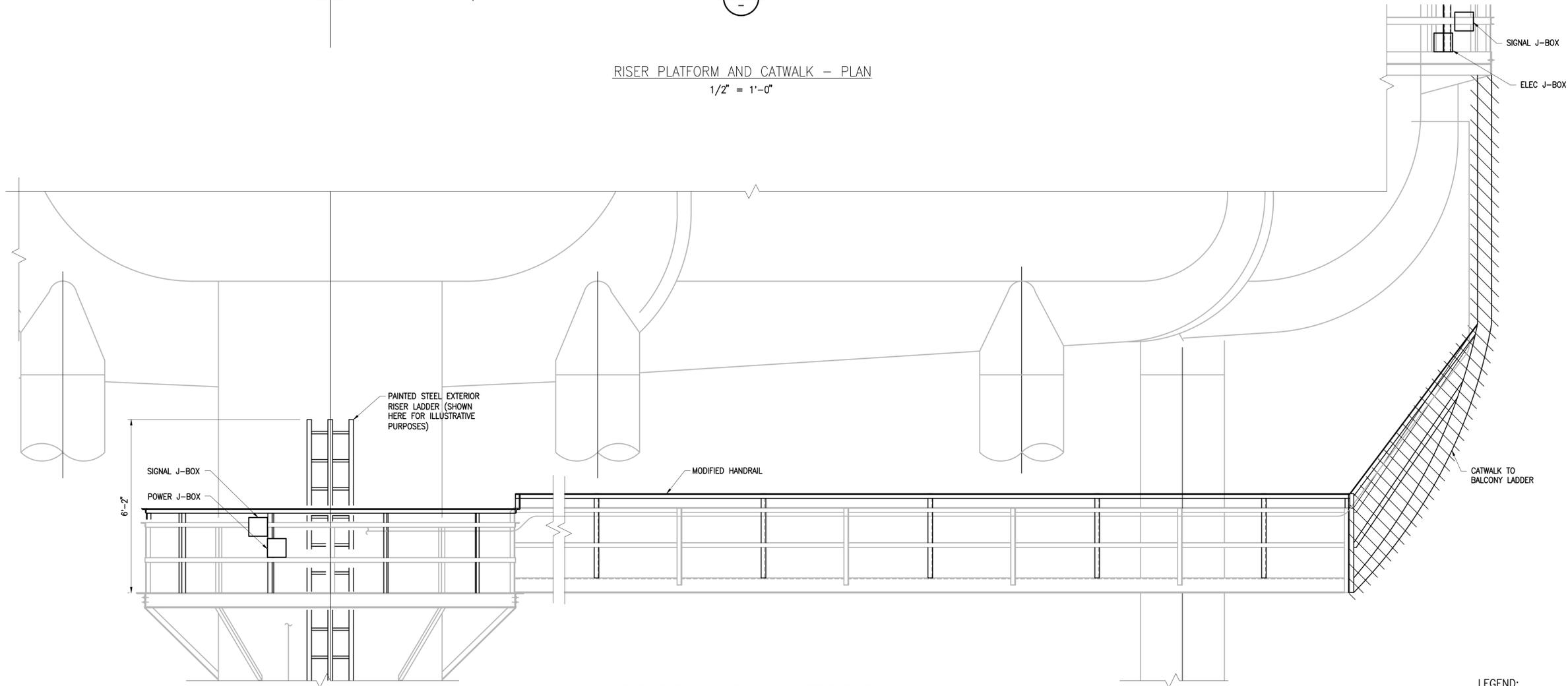
NO.	DATE	BY	REVISIONS	
			CH'D	DESCRIPTION
1	01/28/2017	S/S	MWW	BIDDING

**PROJECT # 11887**  
**NW 2ND AVENUE TANK RESTORATION**  
**BALCONY PLATFORM**  
**PLAN AND DETAILS**

SHEET NO.	OF
<b>S-13</b>	<b>21</b>
TOTAL:	31
CAD FILE:	11887-S13-030DET1
DRAWING FILE NO.	WS-00-0015



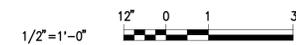
RISER PLATFORM AND CATWALK - PLAN  
1/2" = 1'-0"



RISER PLATFORM AND CATWALK - ILLUSTRATIVE VIEW  
VIEW 2  
1/2" = 1'-0"

ALL EXISTING DIMENSIONS ARE APPROXIMATE  
BASED ON THE 1950 TANK DRAWINGS

LEGEND:  
— EXISTING  
— PROPOSED



HAZEN AND SAWYER  
4000 HOLLYWOOD BLVD., SUITE 750N  
FORT LAUDERDALE, FLORIDA 33301  
CERTIFICATE OF AUTHORIZATION NO. : 2771

State of Florida  
Professional Engineer  
License No. 346939

MICHAEL W.  
WENGRONOVICH

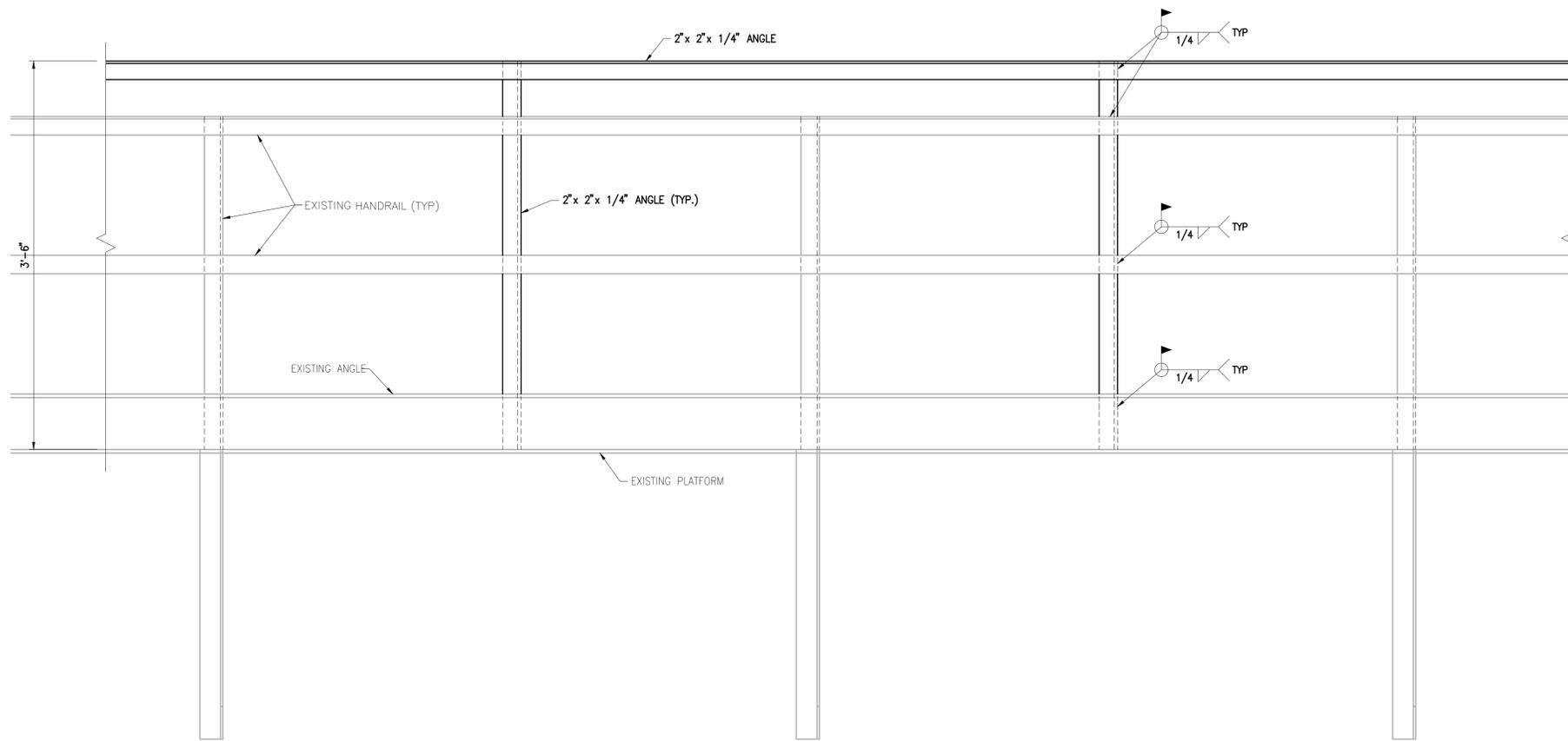
DRAWN BY:	JAK/GHD	DATE:	07/15/11
DESIGNED BY:	MW	SCALE:	1/2" = 1'-0"
CHECKED BY:	MW	FIELD BOOK:	N/A

**CITY OF FORT LAUDERDALE**  
PUBLIC WORKS DEPARTMENT  
**ENGINEERING & ARCHITECTURE**  
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

NO.	DATE	BY	REVISIONS	
			CHK'D	DESCRIPTION
1	01/26/2017	SJS	MW	BIDDING

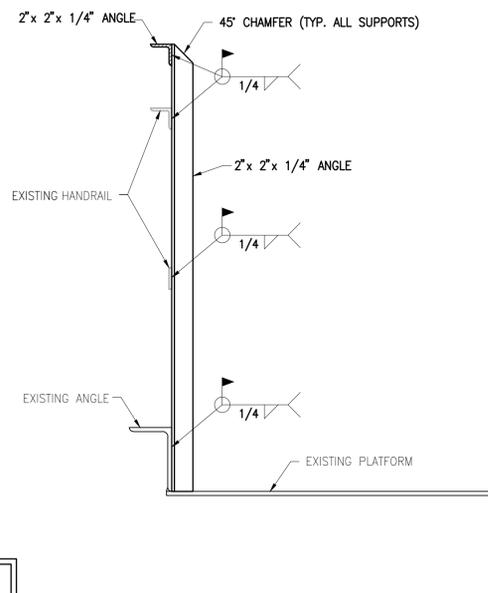
PROJECT # 11887  
NW 2ND AVENUE TANK RESTORATION  
RISER PLATFORM  
PLAN AND DETAILS

SHEET NO.	OF
<b>S-14</b>	<b>21</b>
TOTAL:	31
CAD FILE:	11887-S14-030DETL
DRAWING FILE NO.	WS-00-0015

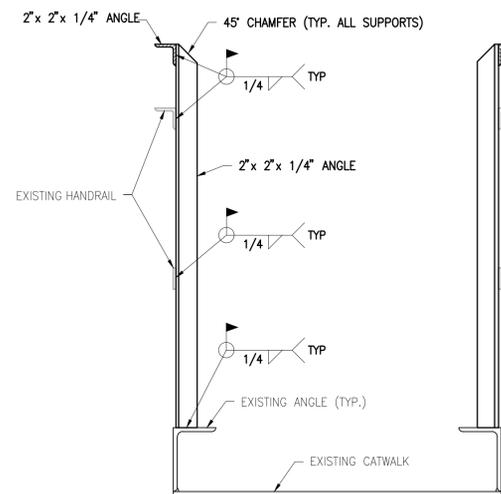


RISER GUARDRAIL - ILLUSTRATIVE VIEW

VIEW  $\frac{3}{1 \frac{1}{2}'' = 1'-0''}$  S-14



RISER PLATFORM SECTION A  $\frac{1 \frac{1}{2}'' = 1'-0''}$  S-14



RISER PLATFORM CATWALK SECTION B  $\frac{1 \frac{1}{2}'' = 1'-0''}$  S-14

NOTES:

1. ALL WELDING TO BE DONE BY CONTRACTOR WITH E70XX ELECTRODES.
2. INSTALL VERTICAL POSTS AT MID POINT BETWEEN ALL EXISTING VERTICAL POSTS.
3. EXISTING CONDITIONS MAY VARY FROM WHAT IS SHOWN ON THE DRAWINGS.

LEGEND:

- EXISTING
- PROPOSED



ALL EXISTING DIMENSIONS ARE APPROXIMATE BASED ON THE 1950 TANK DRAWINGS



HAZEN AND SAWYER  
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CERTIFICATE OF AUTHORIZATION NO. : 2771

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WENGRENOWICH

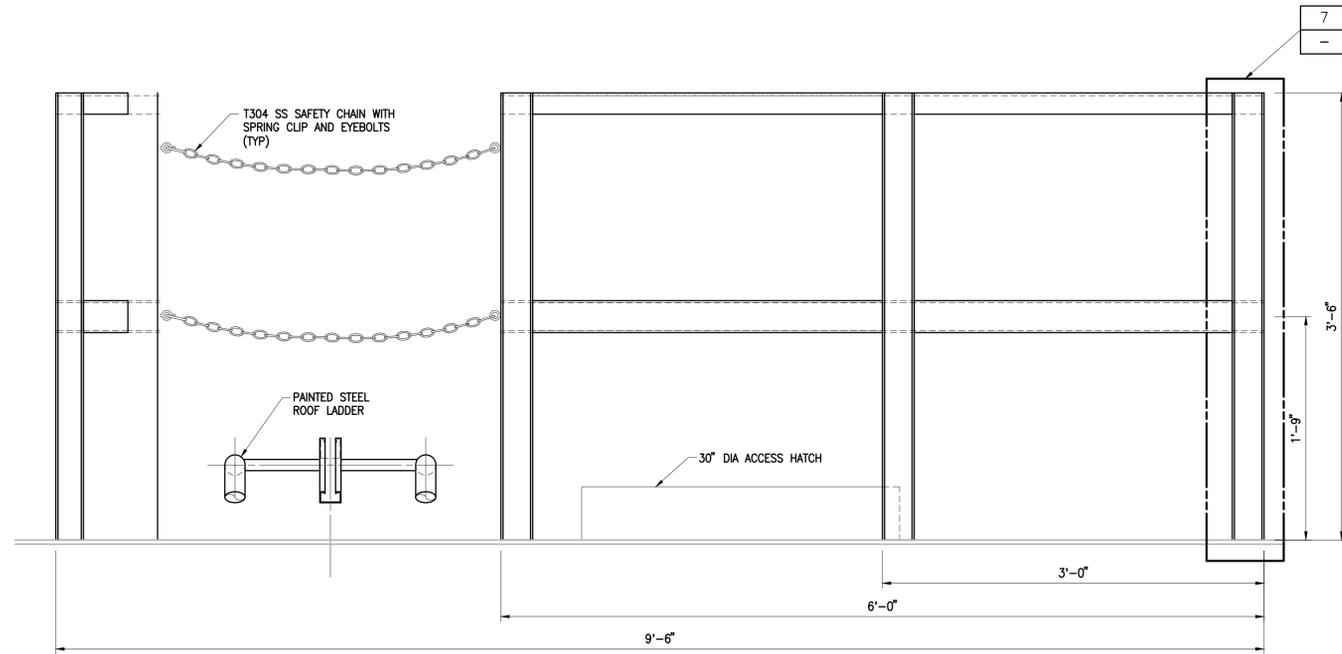
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DRAWN BY:	GHD
DESIGNED BY:	MMW
CHECKED BY:	MMW
FIELD BOOK:	N/A

**CITY OF FORT LAUDERDALE**  
PUBLIC WORKS DEPARTMENT  
ENGINEERING & ARCHITECTURE  
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

NO.	REVISIONS		DESCRIPTION
	DATE	BY	
1	01/28/2017	S/S	MMW BIDDING

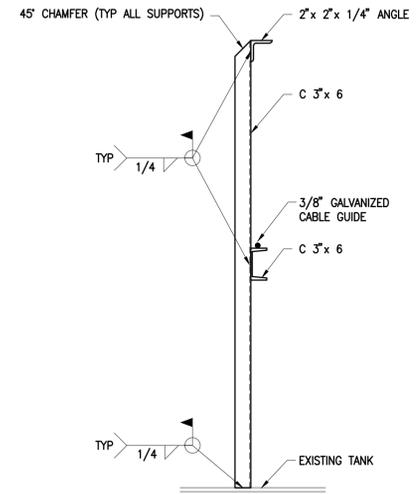
PROJECT # 11887  
NW 2ND AVENUE TANK RESTORATION  
RISER PLATFORM  
HANDRAIL DETAILS

SHEET NO.	OF
<b>S-15</b>	<b>21</b>
TOTAL:	31
CAD FILE:	11887-S15-030DET1
DRAWING FILE NO.	WS-00-0015

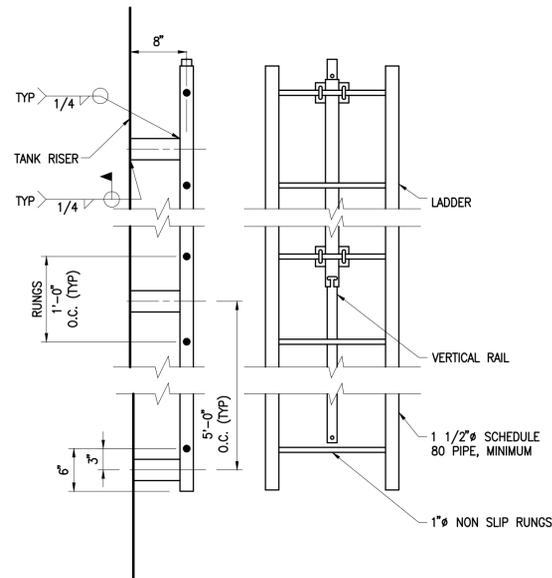


SECTION A  
1 1/2" = 1'-0" S-9

NOTE:  
ALL WELDING SHALL BE DONE BY CONTRACTOR WITH E70XX ELECTRODES.



DETAIL 7  
1 1/2" = 1'-0"



LADDER DETAIL

DETAIL	8
NTS	STD

NOTE:  
TYPICAL DETAIL FOR STEEL AND STAINLESS STEEL LADDERS.

LEGEND:

— EXISTING  
— PROPOSED



HAZEN AND SAWYER  
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CERTIFICATE OF AUTHORIZATION NO. : 2771

State of Florida  
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License No. 34939  
MICHAEL W.  
WENGRONOVICH

DRAWN BY:	DATE:
RDA	07/15/11
DESIGNED BY:	SCALE:
MWW	VARIOUS
CHECKED BY:	
MWW	
FIELD BOOK:	N/A

CITY OF FORT LAUDERDALE  
PUBLIC WORKS DEPARTMENT  
ENGINEERING & ARCHITECTURE  
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

NO.	REVISIONS		DESCRIPTION
	DATE	BY	
1	01/28/2017	S/S	MWW BIDDING

PROJECT # 11887  
NW 2ND AVENUE TANK RESTORATION  
ROOF AND LADDER  
DETAILS

SHEET NO.	OF
<b>S-16</b>	<b>21</b>
TOTAL:	31
CAD FILE:	11887-S16-030DETL
DRAWING FILE NO.	WS-00-0015

ALL EXISTING DIMENSIONS ARE APPROXIMATE  
BASED ON THE 1950 TANK DRAWINGS



HAZEN AND SAWYER  
 4000 HOLLYWOOD BLVD., SUITE 750N  
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 CERTIFICATE OF AUTHORIZATION NO. : 2771

State of Florida  
 Professional Engineer  
 License No. 346939  
 MICHAEL W.  
 WENGRENOWICH

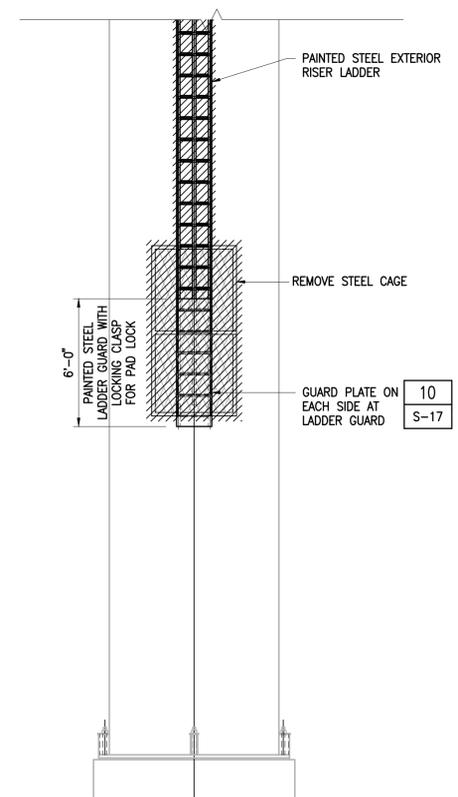
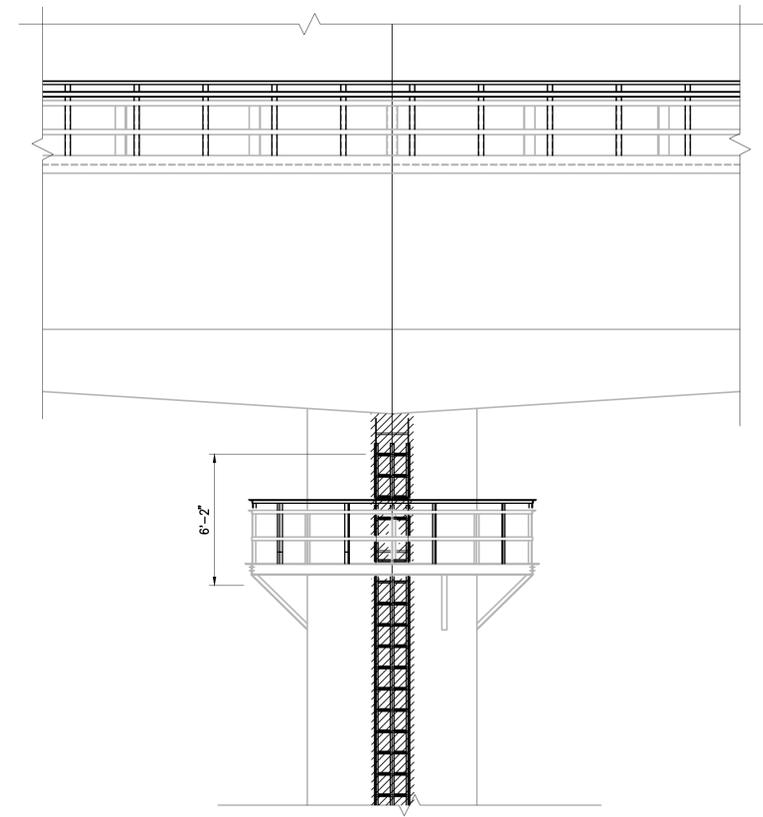
DRAWN BY: JAK/GHD  
 DESIGNED BY: MWW  
 CHECKED BY: MWW  
 FIELD BOOK: N/A  
 DATE: 07/15/11  
 SCALE: 1/4" = 1'-0"

**CITY OF FORT LAUDERDALE**  
 PUBLIC WORKS DEPARTMENT  
 ENGINEERING & ARCHITECTURE  
 100 North Andrews Avenue, Fort Lauderdale, Florida 33301

NO.	DATE	BY	CHKD	DESCRIPTION
1	01/28/2017	SJS	MWW	BIDDING

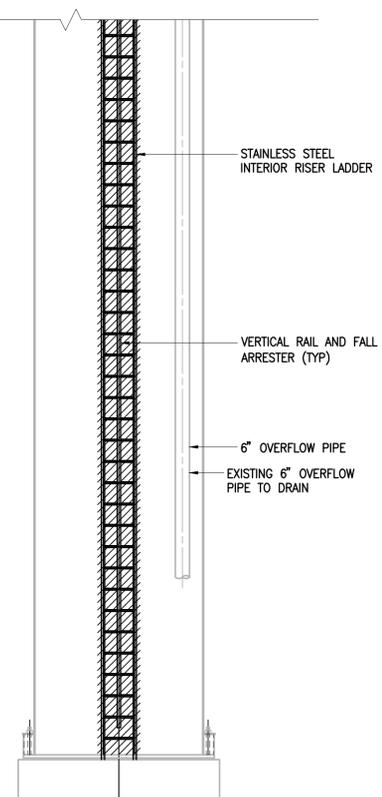
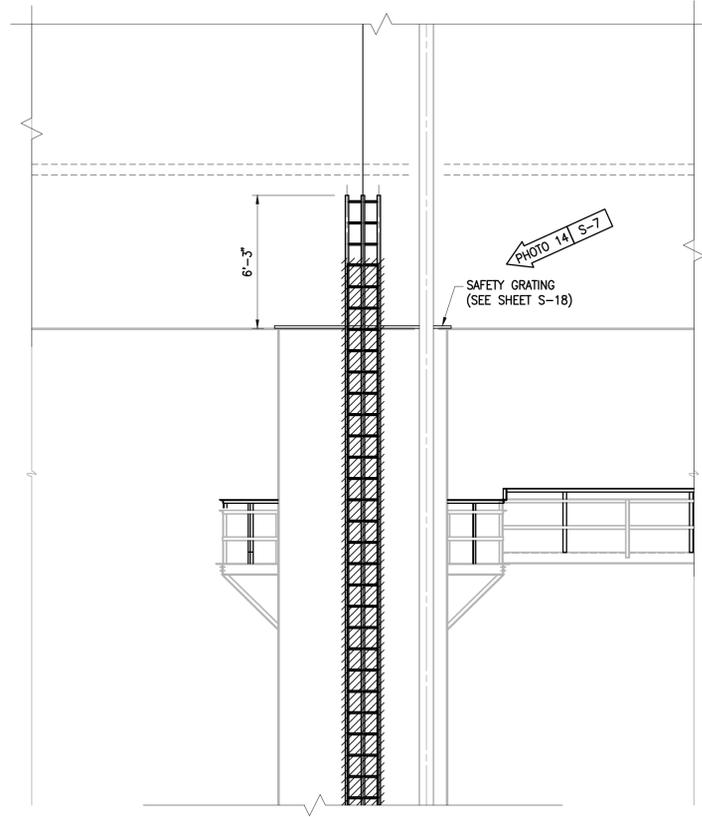
**PROJECT # 11887**  
**NW 2ND AVENUE TANK RESTORATION**  
**RISER LADDERS**  
**SECTIONS AND DETAILS**

SHEET NO.	OF
<b>S-17</b>	<b>21</b>
TOTAL:	31
CAD FILE:	11887-S17-030DETL
DRAWING FILE NO.	WS-00-0015



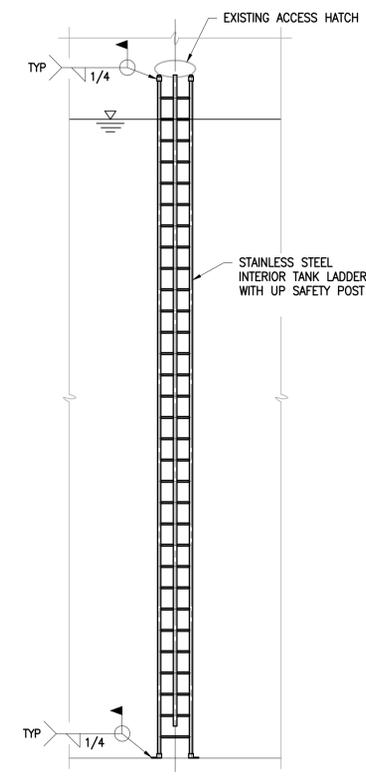
EXTERIOR RISER LADDER  
 VIEW 8  
 1/4" = 1'-0" S-10

**ALL EXISTING DIMENSIONS ARE APPROXIMATE  
 BASED ON THE 1950 TANK DRAWINGS**

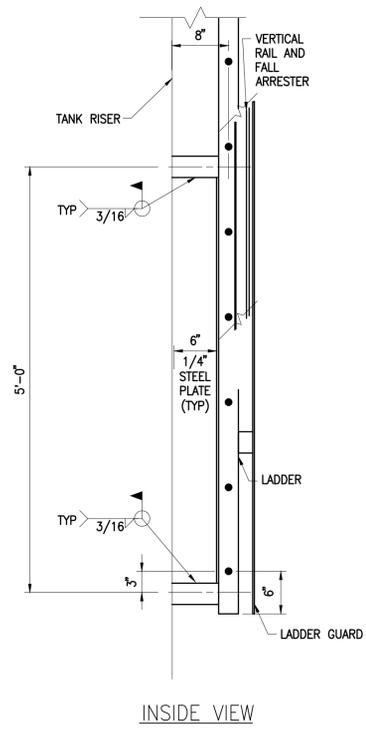


INTERIOR RISER LADDER  
 SECTION E  
 1/4" = 1'-0" S-14

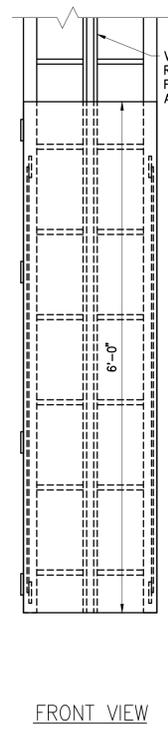
**NOTE:**  
 LADDERS AND VERTICAL RAIL SHALL MEET ALL  
 APPLICABLE OSHA REQUIREMENTS INCLUDING BUT  
 NOT LIMITED TO SECTION 1926.1063



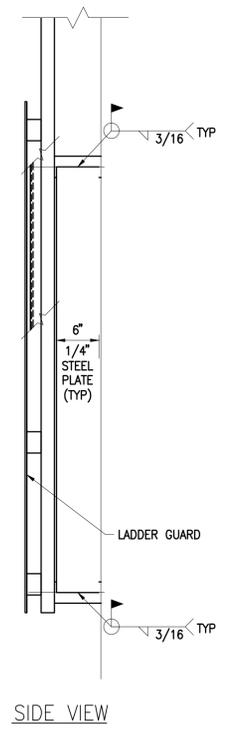
INTERIOR TANK LADDER  
 SECTION G  
 1/4" = 1'-0" S-10



INSIDE VIEW



FRONT VIEW



SIDE VIEW

EXTERIOR RISER LADDER - SIDE GUARD PLATE

DETAIL 10  
 1" = 1'-0"



**LEGEND:**  
 ——— EXISTING  
 ——— PROPOSED



HAZEN AND SAWYER  
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MICHAEL W.  
WENGROVICH

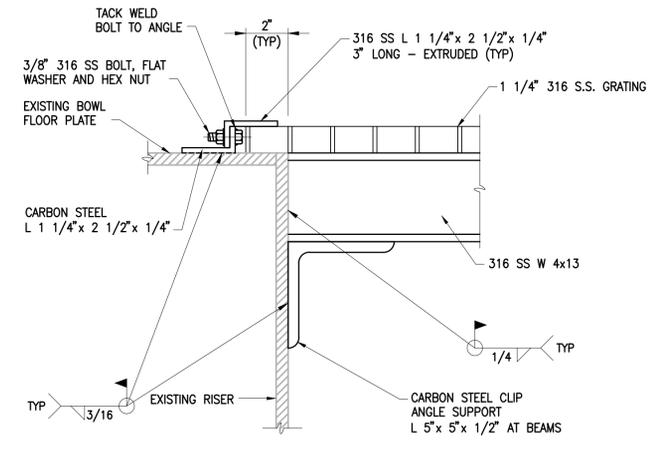
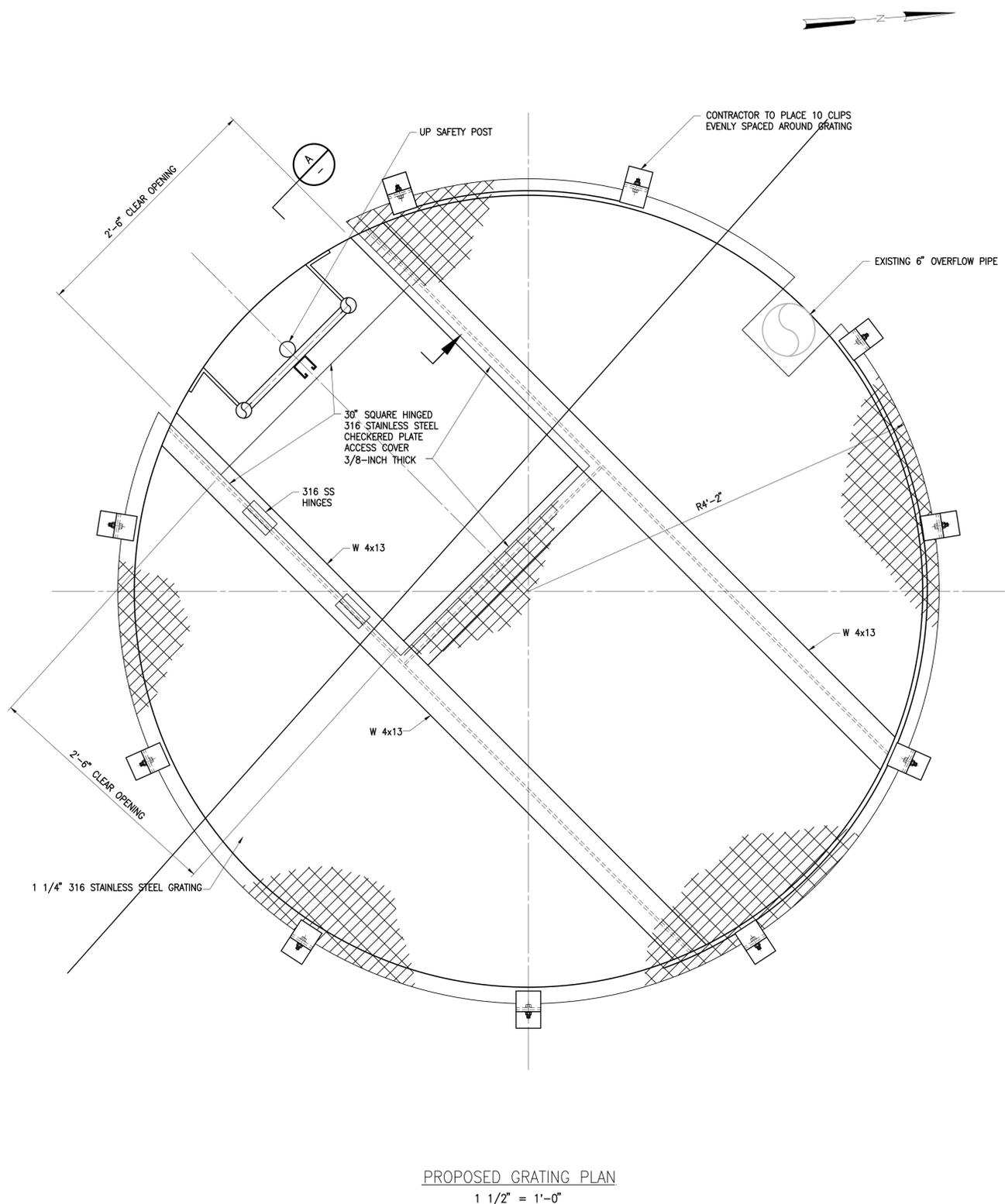
DATE:	07/15/11
DRAWN BY:	JAK/GHD
DESIGNED BY:	SCALE: VARIOUS
CHECKED BY:	MWW
FIELD BOOK:	N/A

**CITY OF FORT LAUDERDALE**  
PUBLIC WORKS DEPARTMENT  
**ENGINEERING & ARCHITECTURE**  
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

NO.	DATE	BY	REVISIONS	
			CH'D	DESCRIPTION
1	01/28/2017	S/S	MWW	BIDDING

**PROJECT # 11887**  
**NW 2ND AVENUE TANK RESTORATION**  
**RISER SAFETY GRATE**  
**DETAILS**

SHEET NO.	OF
<b>S-18</b>	<b>21</b>
TOTAL:	31
CAD FILE:	11887-S18-030DETL
DRAWING FILE NO.	WS-00-0015



- NOTES:
1. NEOPRENE GASKET SHALL BE INSTALLED BETWEEN STAINLESS STEEL AND CARBON STEEL ANGLES.
  2. FOR STAINLESS STEEL TO CARBONSTEEL WELDING, USE GRADE 309 STAINLESS STEEL FILLER MATERIAL.

SECTION **A**  
3" = 1'-0"

PROPOSED GRATING PLAN  
1 1/2" = 1'-0"

ALL EXISTING DIMENSIONS ARE APPROXIMATE  
BASED ON THE 1950 TANK DRAWINGS

**LEGEND:**

— EXISTING  
— PROPOSED

1 1/2" = 1'-0"

3" = 1'-0"



HAZEN AND SAWYER  
 PROFESSIONAL ENGINEERS  
 4000 HOLLYWOOD BLVD., SUITE 750  
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 CERTIFICATE OF AUTHORIZATION NO. : 2771

State of Florida  
 Professional Engineer  
 License No. 34639

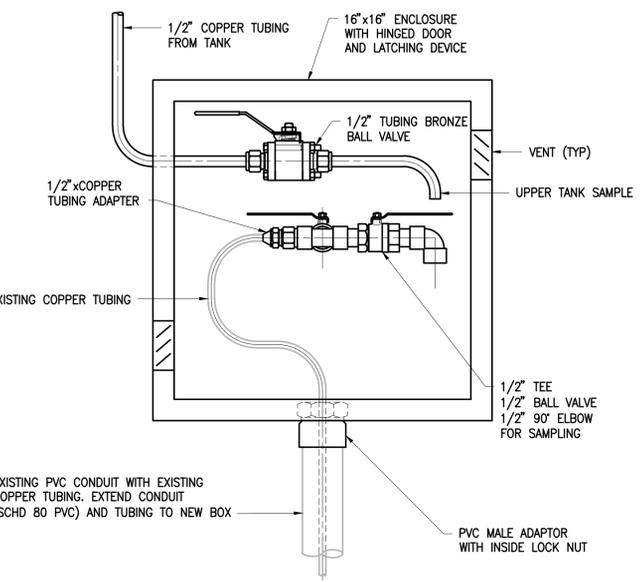
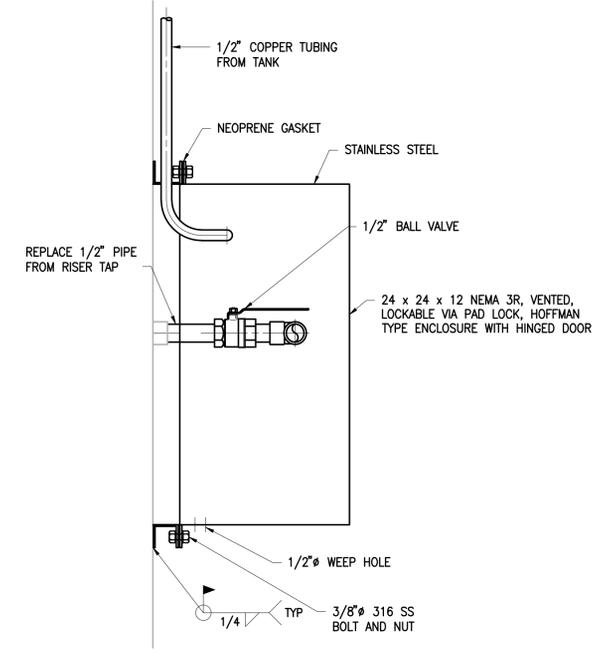
DATE: 07/15/11  
 DRAWN BY: JMB/JAK  
 DESIGNED BY: SCALE: VARIOUS  
 CHECKED BY: MMW  
 FIELD BOOK: N/A

CITY OF FORT LAUDERDALE  
 PUBLIC WORKS DEPARTMENT  
 ENGINEERING & ARCHITECTURE  
 100 North Andrews Avenue, Fort Lauderdale, Florida 33301

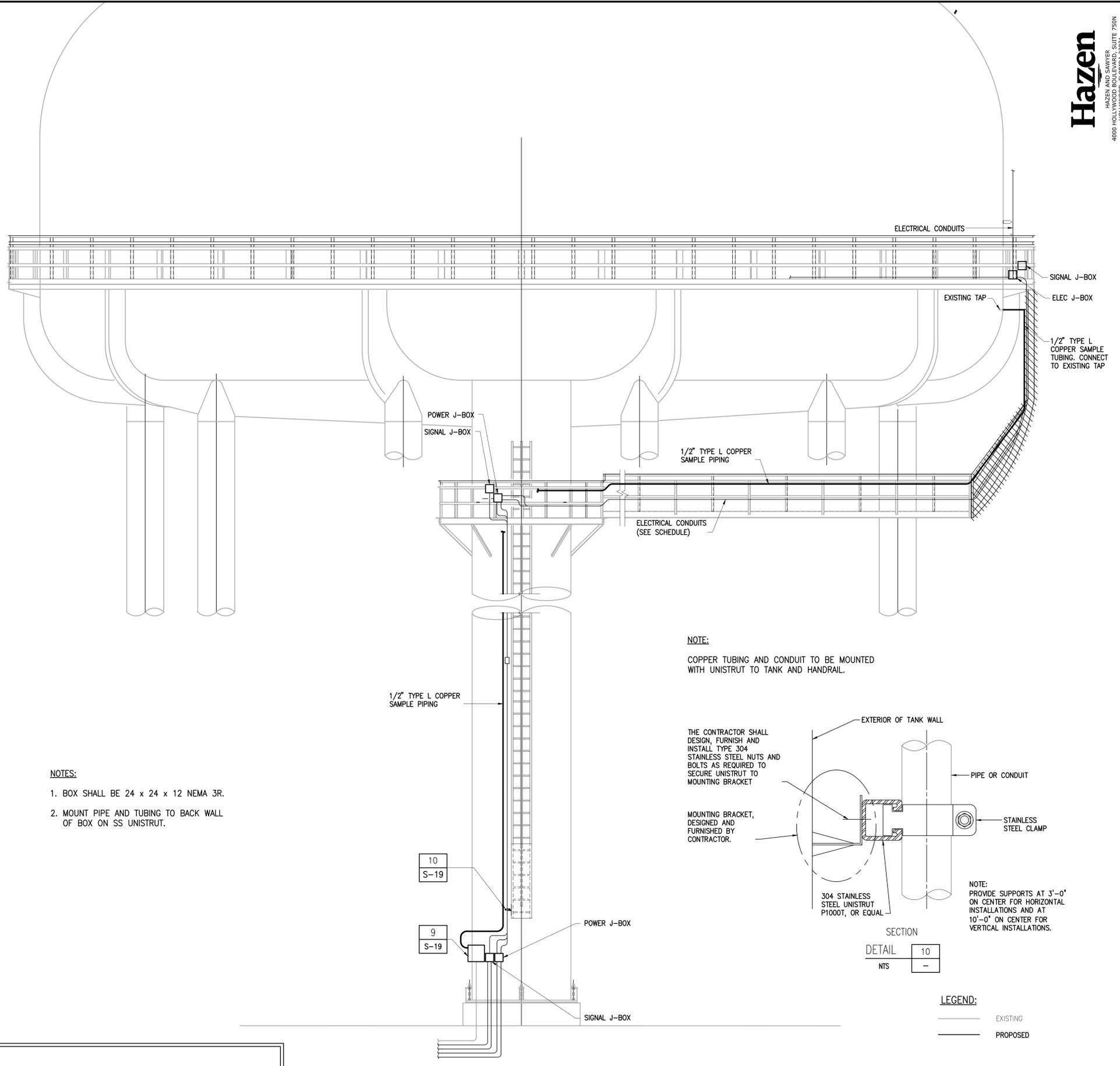
NO.	DATE	BY	CHKD	DESCRIPTION
1	01/28/2017	S/S	MMW	BIDDING

PROJECT # 11887  
 NW 2ND AVENUE TANK RESTORATION  
 WATER SAMPLE PIPING  
 ELEVATION AND DETAILS

SHEET NO. OF  
**S-19** 21  
 TOTAL: 31  
 CAD FILE:  
 11887-S19-030ELEV  
 DRAWING FILE NO.  
 WS-00-0015

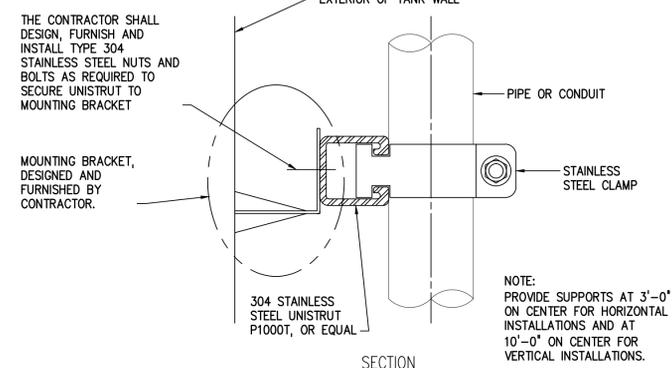


WATER SAMPLE BOX  
 DETAIL 9  
 3" = 1'-0"



- NOTES:
- BOX SHALL BE 24 x 24 x 12 NEMA 3R.
  - MOUNT PIPE AND TUBING TO BACK WALL OF BOX ON SS UNISTRUT.

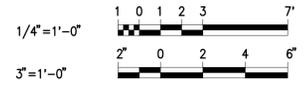
NOTE:  
 COPPER TUBING AND CONDUIT TO BE MOUNTED WITH UNISTRUT TO TANK AND HANDRAIL.



NOTE:  
 PROVIDE SUPPORTS AT 3'-0" ON CENTER FOR HORIZONTAL INSTALLATIONS AND AT 10'-0" ON CENTER FOR VERTICAL INSTALLATIONS.

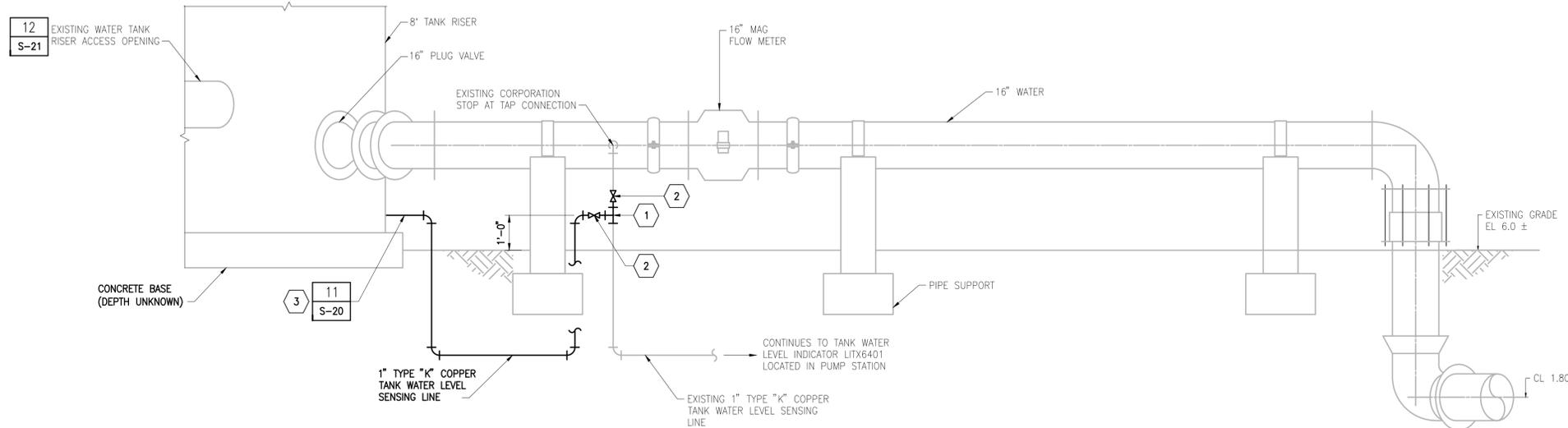
SECTION  
 DETAIL 10  
 NTS -

LEGEND:  
 ——— EXISTING  
 ——— PROPOSED

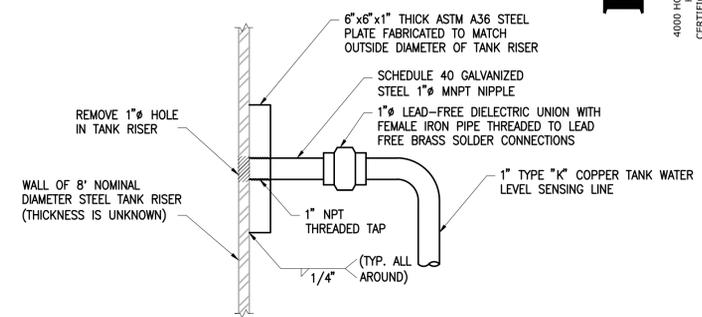


ALL EXISTING DIMENSIONS ARE APPROXIMATE  
 BASED ON THE 1950 TANK DRAWINGS

ELEVATION — ILLUSTRATIVE VIEW  
 1/4" = 1'-0"



SECTION A  
1/2" = 1'-0" S-2



DETAIL 11  
NTS S-20



EXISTING 1" TYPE "K" COPPER TANK WATER LEVEL SENSING LINE

PHOTO 19 - EXISTING WATER LEVEL SENSING PIPE PHOTO  
N.T.S.

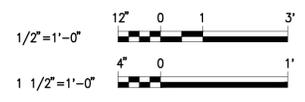
ALL EXISTING DIMENSIONS ARE APPROXIMATE  
BASED ON THE 1950 TANK DRAWINGS

KEYED NOTES:

- 1 CUT IN TEE.
- 2 1" LEAD-FREE BRONZE BALL VALVE WITH LOCKING LEVER AND SOLDER JOINT ENDS.
- 3 THE LOCATION SHOWN FOR THIS CONNECTION IS CONCEPTUAL. THE ACTUAL LOCATION SHALL BE DETERMINED IN THE FIELD BY THE OWNER WITH THE CONTRACTOR.

LEGEND:

— EXISTING  
— PROPOSED



HAZEN AND SAWYER  
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HALLANDALE BEACH, FLORIDA 33009  
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State of Florida  
Professional Engineer  
License No. 34639  
MICHAEL W.  
WENGROVICH

DATE:	07/15/11
DRAWN BY:	JMB/JAK
DESIGNED BY:	SCALE: VARIOUS
CHECKED BY:	MWW
FIELD BOOK:	N/A

CITY OF FORT LAUDERDALE  
PUBLIC WORKS DEPARTMENT  
ENGINEERING & ARCHITECTURE  
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

NO.	DATE	BY	REVISIONS	
			CHK'D	DESCRIPTION
1	01/28/2017	S/S	MWW	BIDDING

PROJECT # 11887  
NW 2ND AVENUE TANK RESTORATION  
WATER LEVEL SENSING PIPE  
SECTION AND PHOTO

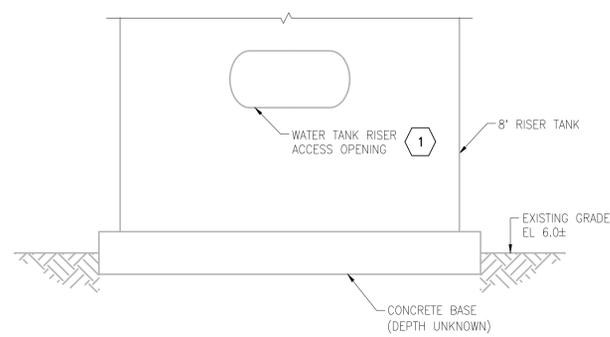
SHEET NO.	OF
S-20	21
TOTAL:	31
CAD FILE:	11887-S20-030DETL
DRAWING FILE NO.	WS-00-0015



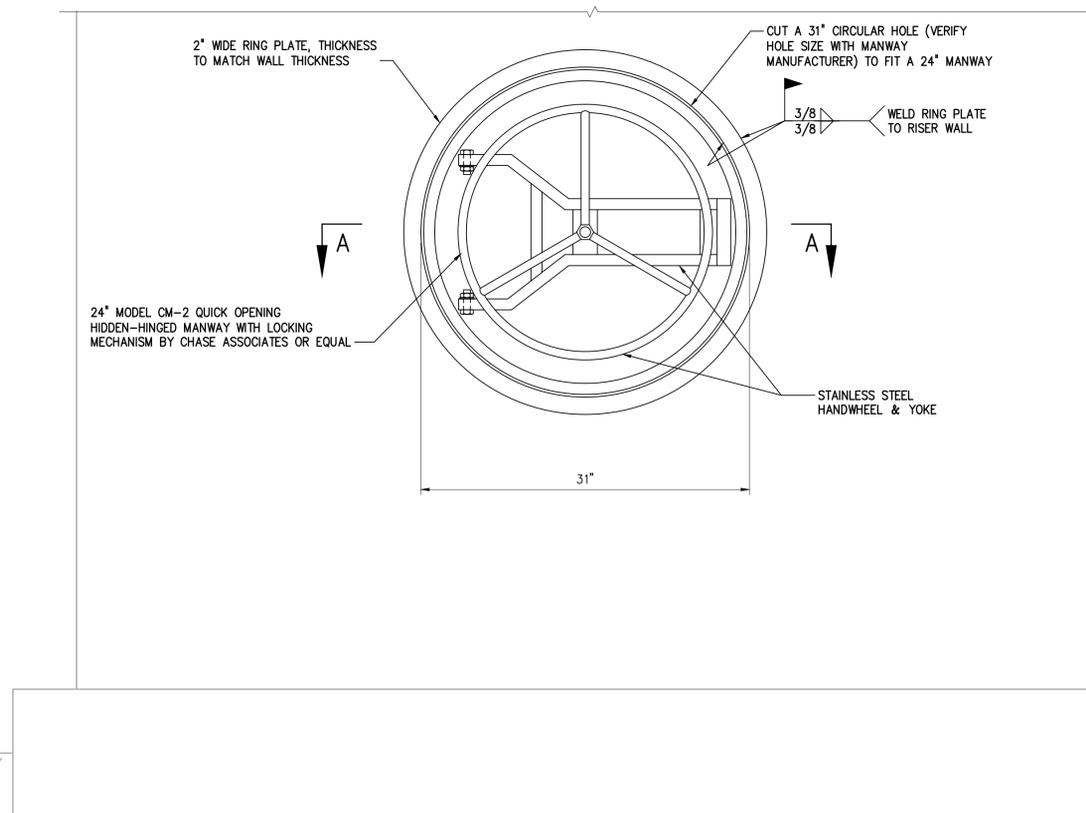
PHOTO 20 - RISER ACCESS OPENING - CLOSED HATCH  
N.T.S.



PHOTO 21 - RISER ACCESS OPENING - OPEN HATCH  
N.T.S.

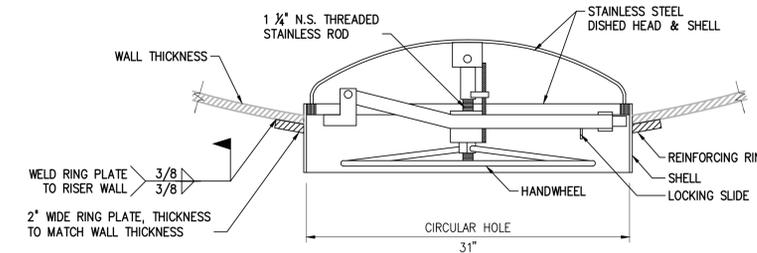


EXISTING CONDITION



PROPOSED CONDITION

DETAIL	12
1-1/2"=1'-0"	S-20



SECTION A-A

KEYED NOTES:

- ① SEE PHOTOS 20 AND 21 FOR EXISTING ACCESS OPENING

LEGEND:

- EXISTING
- PROPOSED

ALL EXISTING DIMENSIONS ARE APPROXIMATE  
BASED ON THE 1950 TANK DRAWINGS

**Hazen**

HAZEN AND SAWYER  
PROFESSIONAL ENGINEERS  
4000 HOLLYWOOD BLVD., SUITE 750  
FORT LAUDERDALE, FLORIDA 33301  
CERTIFICATE OF AUTHORIZATION NO.: 2771

State of Florida  
Professional Engineer  
License No. 34639

MICHAEL W.  
WENGROVICH

DATE:	07/15/11
DESIGNED BY:	VARIOUS
CHECKED BY:	MWW
FIELD BOOK:	N/A

CITY OF FORT LAUDERDALE  
PUBLIC WORKS DEPARTMENT  
ENGINEERING & ARCHITECTURE  
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

NO.	DATE	BY	CHKD	DESCRIPTION
1	01/28/2017	S/S	MWW	BIDDING

PROJECT # 11887  
NW 2ND AVENUE TANK RESTORATION  
ACCESS OPENING MODIFICATION  
PHOTOS AND DETAILS

SHEET NO.	OF
S-21	21
TOTAL:	31
CAD FILE:	11887-S21-030DETL
DRAWING FILE NO.	WS-00-0015





HAZEN AND SAWYER  
4000 HOLLYWOOD BLVD., SUITE 7500  
MIAMI, FLORIDA 33150  
CERTIFICATE OF AUTHORIZATION NO. : 2771

State of Florida  
Professional Engineer  
License No. 17301

JOHN C. BURKE

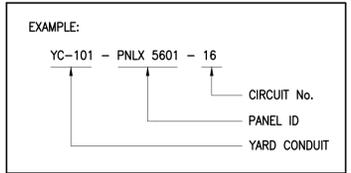
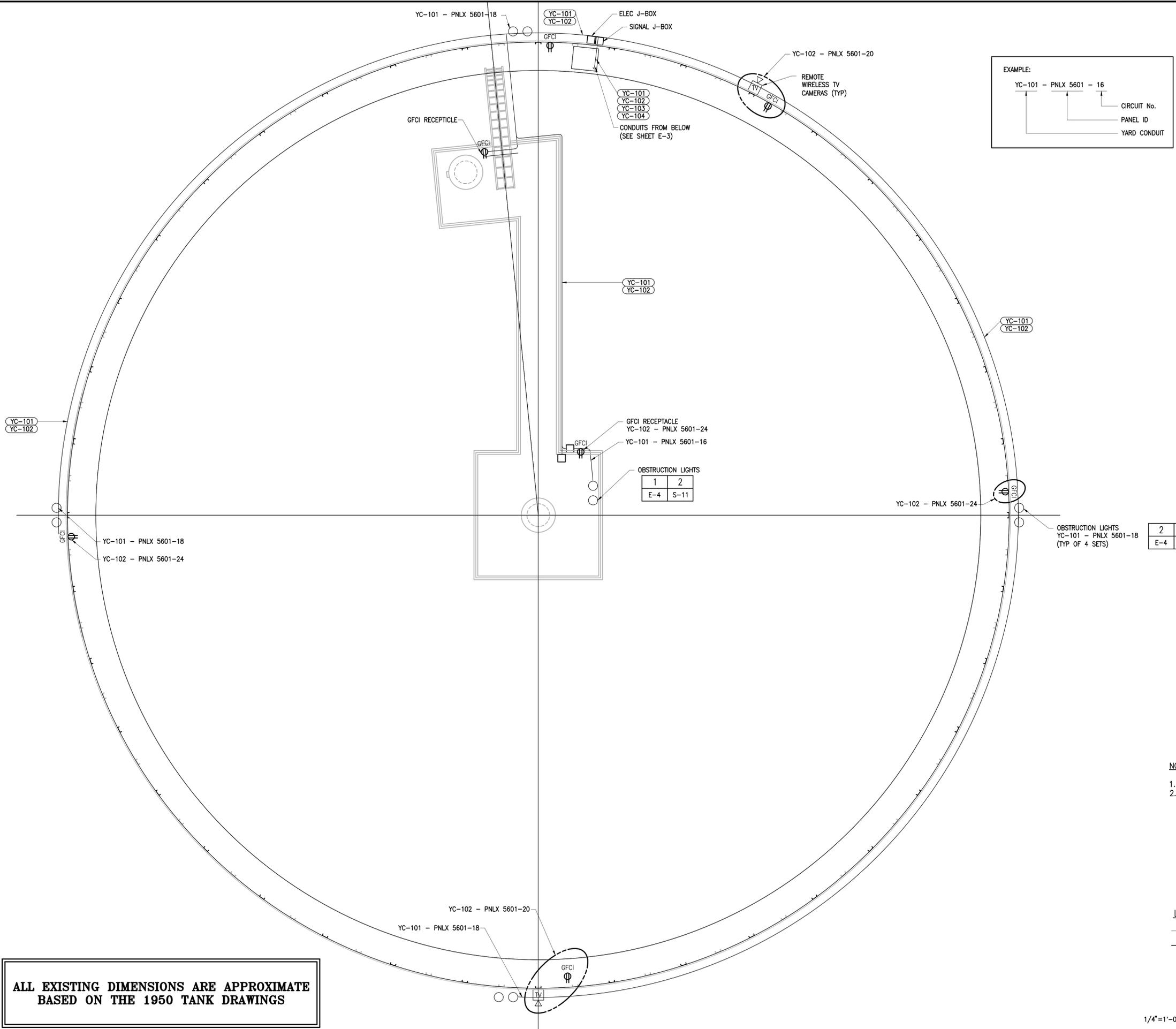
DRAWN BY:	JAK/GHD	DATE:	07/15/11
DESIGNED BY:	MMW	SCALE:	1/4" = 1'-0"
CHECKED BY:	MMW	FIELD BOOK:	N/A

**CITY OF FORT LAUDERDALE**  
PUBLIC WORKS DEPARTMENT  
**ENGINEERING & ARCHITECTURE**  
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

NO.	DATE	BY	CHK'D	REVISIONS	
				DESCRIPTION	BIDDING
1	01/28/2017	SIS	MMW		

**PROJECT # 11887**  
**NW 2ND AVENUE TANK RESTORATION**  
**ELECTRICAL**  
**TOP PLAN**

SHEET NO.	OF
<b>E-2</b>	<b>04</b>
TOTAL:	31
CAD FILE:	11887-E02-030PLAN
DRAWING FILE NO.	WS-00-0015



**ALL EXISTING DIMENSIONS ARE APPROXIMATE  
BASED ON THE 1950 TANK DRAWINGS**

- NOTES:**
1. PAINT CONDUITS TO MATCH TANK.
  2. REMOVE ALL EXISTING UNUSED CONDUITS

**LEGEND:**

--- EXISTING  
— PROPOSED

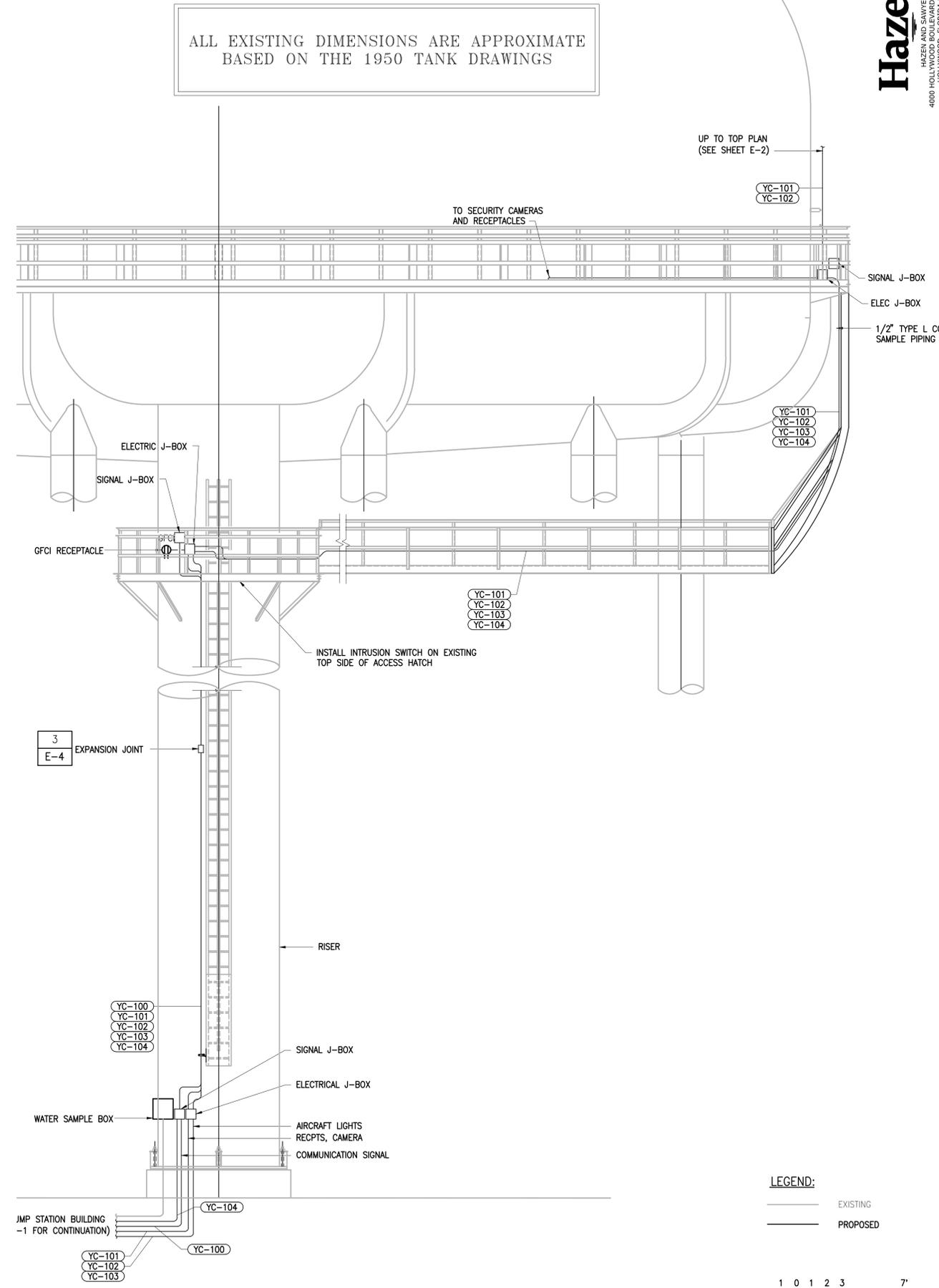


PLOT DATE: 1/30/2017 5:11 PM BR: CAU-10

PUMP BLDG		EXISTING PANEL PNLX5601										MAIN BKR			
208Y/120V, 50A, 3PH, 4W, 22kAIC FROM 30kVA XMER TR2												SURFACE MOUNT			
NO.	USE	AMPS LOAD			WIRE	C.B.		C.B.	AMPS LOAD			USE	NO.		
		A	B	C		POLE	TRIP		A	B	C				
1	INTERIOR LIGHTING	8.0			2#12,1#12G,3/4C	20	1	1	20	2#12,1#12G,3/4C	3.0			INTERIOR RECEPTACLES	2
3	EXTERIOR LIGHTING		5.0		2#12,1#12G,3/4C	20	1	1	20	2#12,1#12G,3/4C		3.0		EXTERIOR RECEPTACLES	4
5	EXTERIOR SPARE			0.0		20	1	1	20	2#12,1#12G,3/4C			5.0	TANK LIGHTING	6
7	LIGHTING CONTACTOR	3.0			2#12,1#12G,3/4C	20	1	1	20		0.0			SPARE	8
9	EXTERIOR SPARE		0			20	1	1	20	2#12,1#12G,3/4C		8.0		MOTOR SPACE HEATER	10
11	PLC CONTROL PANEL			8.0	2#12,1#12G,3/4C	20	1	1	20			0.0		SPARE	12
13	TANK TOP FLASHING OBSTRUCTION LIGHT	1.0			2#12,1#12G,3/4C	20	1	1	20		0.0			SPARE	14
15	TANK PERIMETER OBSTRUCTION LIGHTS		2.0		2#10,1#10G,3/4C	20	1	1	20			0.0		SPARE	16
17	BALCONY CONVENIENCE RECEPTACLES			3.0	2#10,1#10G,3/4C	20	1	1	20				0.0	SPARE	18
19	SPARE WIRING TO BALCONY J-BOX	0.0			2#10,1#10G,3/4C	20	1	1	20		0.0			SPARE	20
21	SPACE							1	20			0.0		SPARE	22
23	SPACE							1	20				0.0	SPARE	24
25								1	20					SPARE	26
27	MAIN BREAKER						50							SPACE	28
29														SPACE	30
		12.0	7.0	11.0						3.0	11.0	5.0			
								TOTAL AMP DEMAND		15	18	16			

CABLE AND CONDUIT SCHEDULE				
CONDUIT	FROM	TO	CABLE / CONDUIT	REMARKS
YC-100	PLCX 6400	TANK ACCESS HATCH INTRUSION SWITCH	4#14, #14GND, 1"C	VIA BASE SIGNAL J-BOX
YC-101	PNLX 5601 CIRCUIT #13	(1 DUAL) TANK TOP FLASHING OBSTRUCTION LIGHT FIXTURE	SEE PNLX5601 SCHEDULE	USE SPARE 20A-1P CIRCUIT BREAKER IN PNLX 5601 VIA FAA LIGHTING CONTROLLER
	PNLX 5601 CIRCUIT #15	(4 SETS) TANK PERIMETER OBSTRUCTION LIGHT FIXTURES		USE SPARE 20A-1P CIRCUIT BREAKER IN PNLX 5601 VIA FAA LIGHTING CONTROLLER
YC-102	PNLX 5601 CIRCUIT #17	CONVENIENCE RECEPTACLES	SEE PNLX5601 SCHEDULE	USE SPARE 20A-1P CIRCUIT BREAKER IN PNLX 5601
	PNLX 5601 CIRCUIT #19	SPARE WIRING TO ELECTRIC JUNCTION BOX ON BALCONY. CAP WIRES IN JUNCTION BOX FOR FUTURE USE.		USE SPARE 20A-1P CIRCUIT BREAKER IN PNLX 5601
YC-103	PUMP STATION	BALCONY SIGNAL J-BOX	1-1/2" GRC E.C. W/PULLSTRING	FUTURE F.O.C.
YC-104	PLCX 6400	BALCONY SECURITY J-BOX	2" E.C. W/PULLSTRING	SPARE

- NOTES:
- PANEL PNLX 5601 IS LOCATED IN THE PUMP STATION PUMP ROOM EAST WALL.
  - YC= YARD CONDUIT.
  - CONDUITS SHALL BE PAINTED TO MATCH TANK.
  - REFER TO LIGHT SPACE DRAWINGS FOR ADDITIONAL CONDUIT AND WIRING REQUIREMENTS.
  - THERE WILL BE NO NEW ELECTRICAL EQUIPMENT OR DEVICES INSTALLED BELOW DESIGN FLOOD ELEVATION WITH THIS PROJECT.



Hazen and Sawyer  
4000 HOLLYWOOD BLVD., SUITE 7500  
FORT LAUDERDALE, FLORIDA 33309  
CERTIFICATE OF AUTHORIZATION NO. : 2771

State of Florida  
Professional Engineer  
License No. 17301

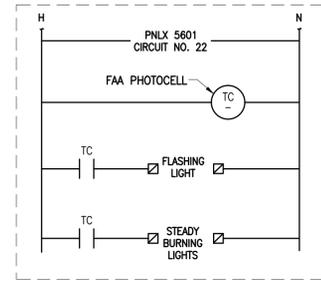
DATE: 07/15/11  
DRAWN BY: JMB/JAK  
DESIGNED BY: SCALE: 1/4" = 1'-0"  
CHECKED BY: MWW  
FIELD BOOK: N/A

CITY OF FORT LAUDERDALE  
PUBLIC WORKS DEPARTMENT  
ENGINEERING & ARCHITECTURE  
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

NO.	DATE	BY	CHKD	REVISIONS	
				DESCRIPTION	BIDDING
1	01/28/2017	S/S	MWW		

PROJECT # 11887  
NW 2ND AVENUE TANK RESTORATION  
ELEVATION AND SCHEDULES

SHEET NO. OF  
**E-3** 04  
TOTAL: 31  
CAD FILE: 11887-E03-030PLAN  
DRAWING FILE NO. WS-00-0015

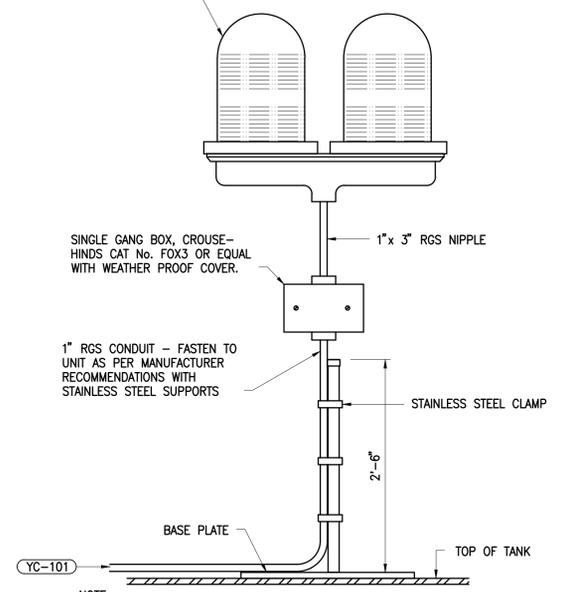


FAA SPEC LIGHTING CONTROLLER SUITABLE FOR CONTROLLING (1) FLASHING OBSTRUCTION LIGHT AND (4) STEADY-BURNING OBSTRUCTION LIGHTS. PROVIDE AS 120VAC RATED WITH FAA SPEC PHOTOCELL CONTROL.

**FAA TIME CLOCK CONTROL**

FAA LIGHTING TIME CLOCK SHALL BE INSTALLED ADJACENT TO PANEL PNLX 5601 IN THE PUMP BUILDING.

FAA SPEC DUAL L-864 RED LED FLASHING OBSTRUCTION LIGHT. 120 VAC DUAL FIXTURE LED LAMPS 1" THREADED HUB NEMA 4x RATED WATTS (TYP) 15 @ 120 VAC 5 YEAR WARRANTY

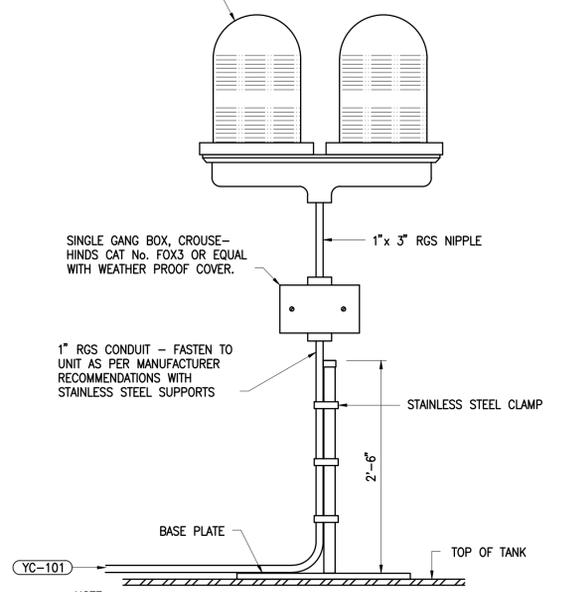


NOTE: MOUNT AIRCRAFT OBSTRUCTION LIGHT AS SHOWN ON STRUCTURAL DRAWING S-11.

**FLASHING OBSTRUCTION LIGHT DETAIL**

DETAIL	1
NTS	E-2

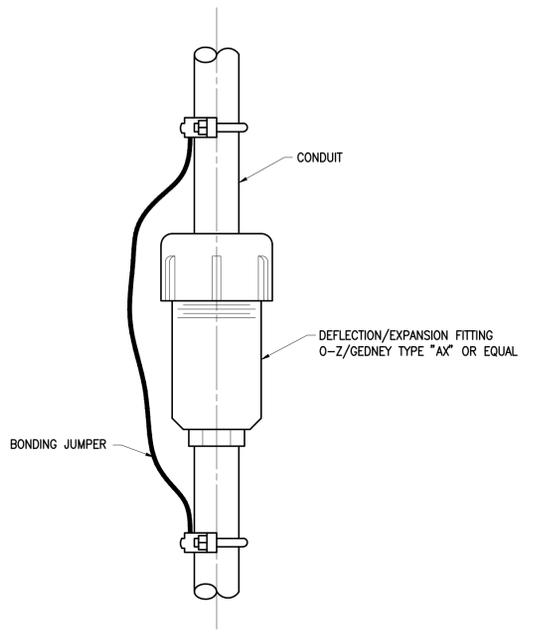
FAA SPEC DUAL L-810 860 SERIES RED LED OBSTRUCTION LIGHT. 120 VAC DUAL FIXTURE LED LAMPS 1" THREADED HUB NEMA 4x RATED WATTS (TYP) 15 @ 120 VAC 5 YEAR WARRANTY



NOTE: MOUNT AIRCRAFT OBSTRUCTION LIGHT AS SHOWN ON STRUCTURAL DRAWING S-11.

**CONSTRUCTION LIGHT DETAIL**

DETAIL	2
NTS	E-2



**EXPANSION COUPLING**

DETAIL	3
NTS	E-2

**LEGEND:**  
 ——— EXISTING  
 ——— PROPOSED



HAZEN AND SAWYER  
 4000 HOLLYWOOD BOULEVARD, SUITE 7500  
 HOLLYWOOD, FLORIDA 33024  
 CERTIFICATE OF AUTHORIZATION NO. : 2771

State of Florida  
 Professional Engineer  
 License No. 17301  
 JOHN C. BURKE

DRAWN BY:	JAK/GHD	DATE:	07/15/11
DESIGNED BY:	MMW	SCALE:	VARIOUS
CHECKED BY:	MMW	FIELD BOOK:	N/A

**CITY OF FORT LAUDERDALE**  
 PUBLIC WORKS DEPARTMENT  
 ENGINEERING & ARCHITECTURE  
 100 North Andrews Avenue, Fort Lauderdale, Florida 33301

NO.	DATE	BY	REVISIONS	
			CH'D	DESCRIPTION
1	01/28/2017	S/S	MMW	BIDDING

**PROJECT # 11887**  
**NW 2ND AVENUE TANK RESTORATION**  
**ELECTRICAL**  
**DETAILS**

SHEET NO.	OF
<b>E-4</b>	<b>04</b>
TOTAL:	31
CAD FILE:	11887-E04-030SCHD
DRAWING FILE NO.	WS-00-15

# Tower Lights



Fort Lauderdale water tower artwork  
Graphics and Lighting Intervention

Volume C Drawings

Part of city project-  
11887

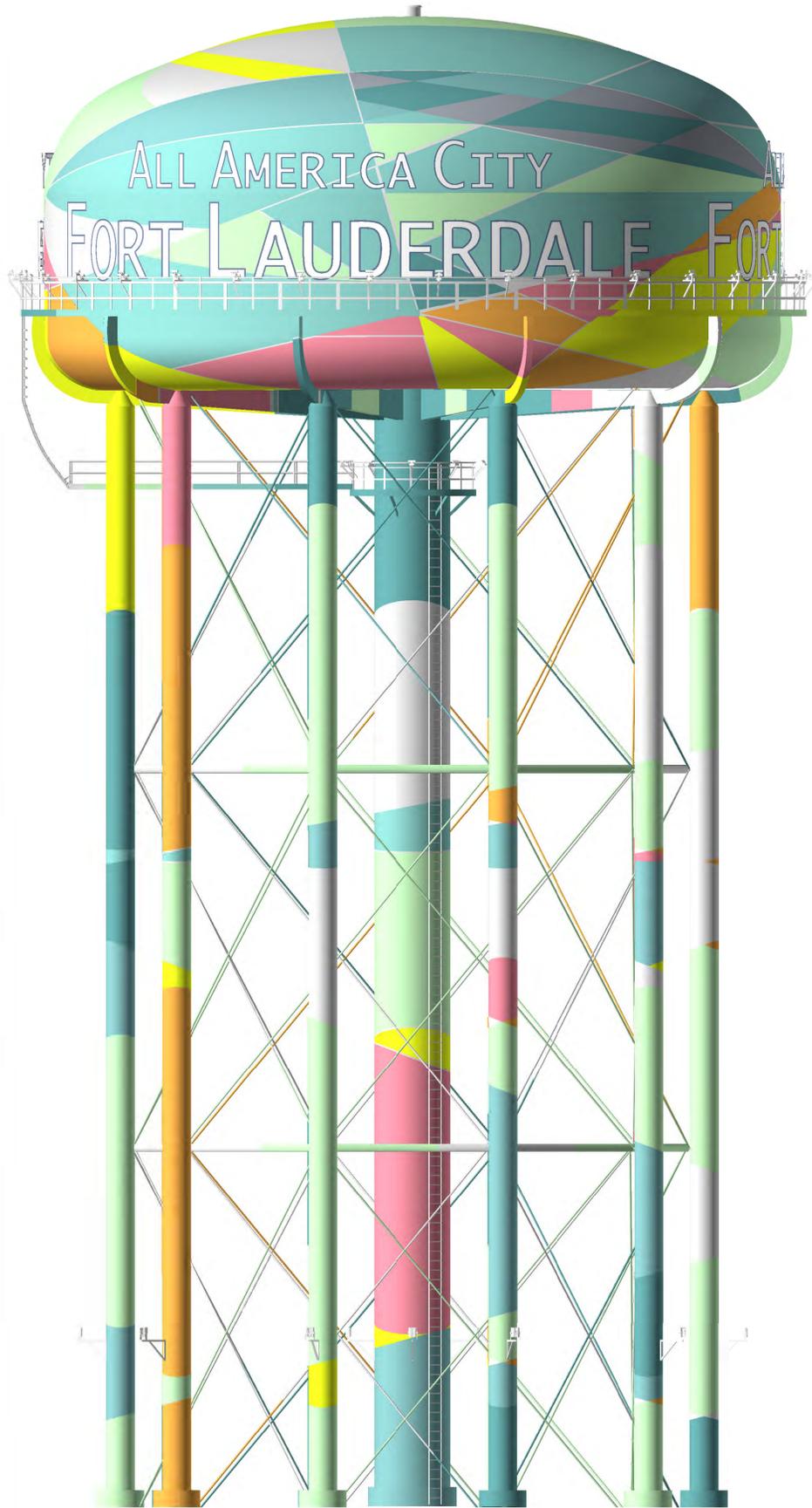
Developed and designed by

Art  
Light  
Space

ArtLightSpace.com

# Tower Lights

## List of Drawings



Drawing Number	Sheet Number	Description
		Cover
	1	List of Drawings

### Paint Schematic

P-01	2	Overview and paint legend
P-02	3	Views around the tower

### Fixture Design and Placement

LD-01	4	Fixture placement
LD-02	5	Bracket details

### Structural Drawing

S-1R	6	Structural analysis of lighting components
------	---	--

### Electrical Plan

E-0	7	Site plan
E-1	8	Lower level electrical plan
E-2	9	Mid level electrical plan
E-3	10	Upper level electrical plan
E-4	11	Pump house electrical plan
E-5	12	Fixture mounting detail
E-6	13	Legend and riser diagram

Fort Lauderdale water tower artwork  
Graphics and Lighting Intervention

Volume C Drawings

Part of city project-  
11887

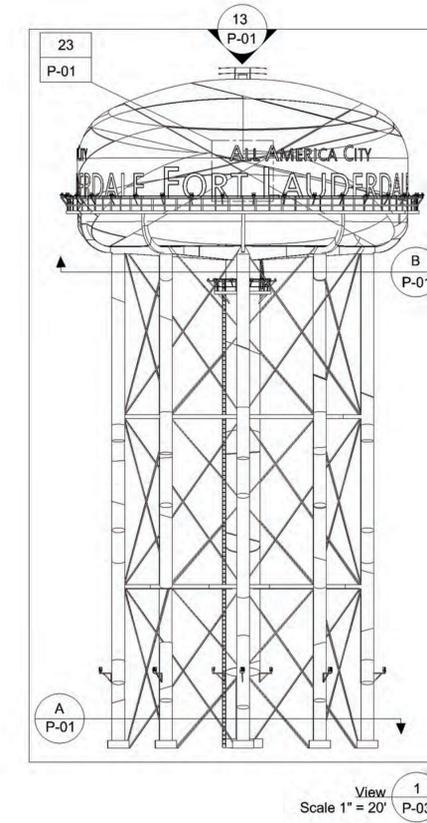
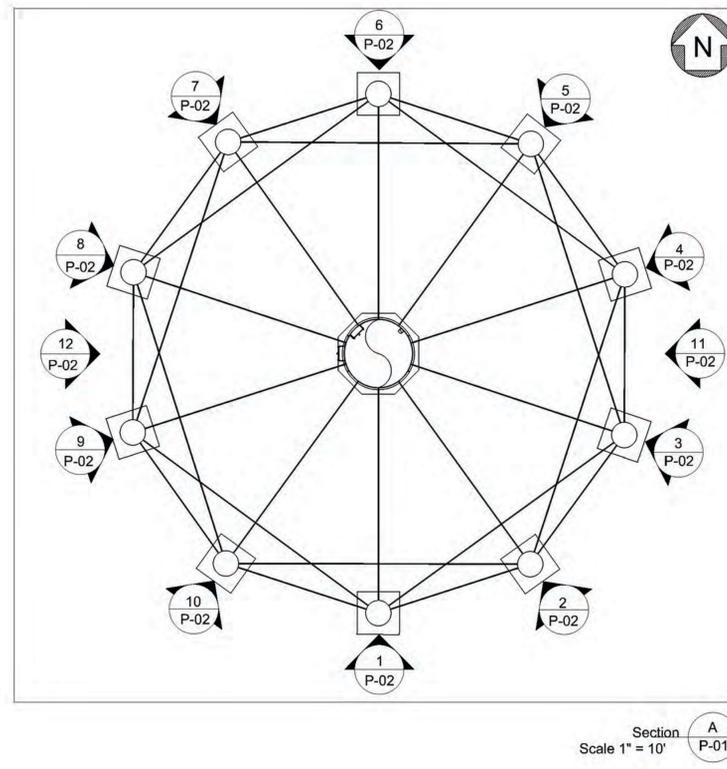
Developed and designed by

Art  
Light  
Space

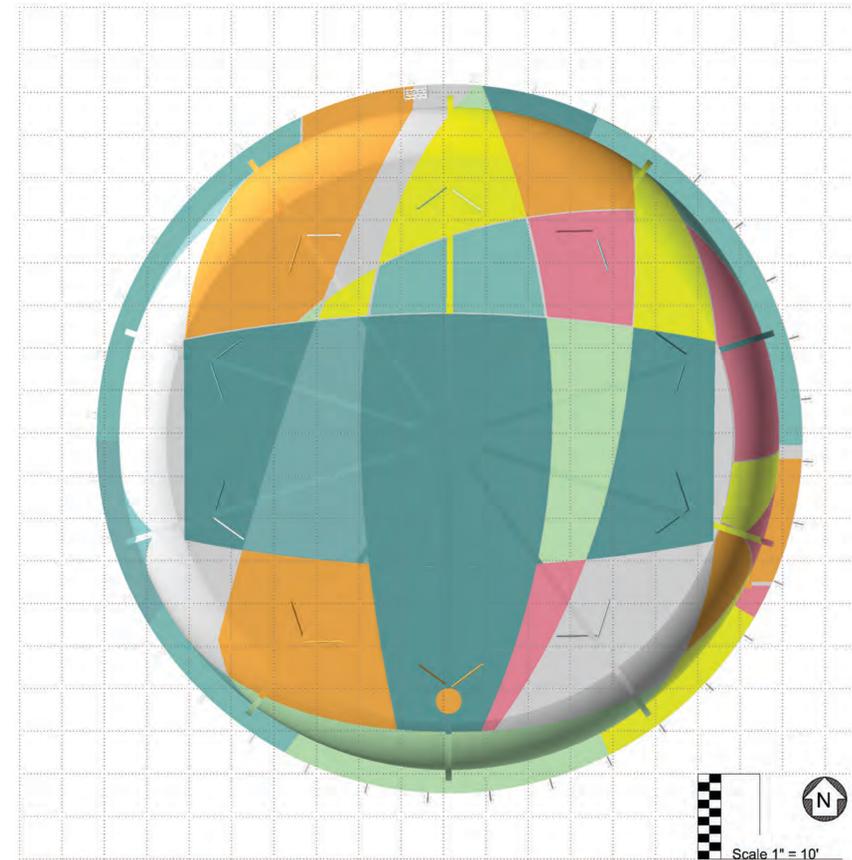
ArtLightSpace.com

### Color Key

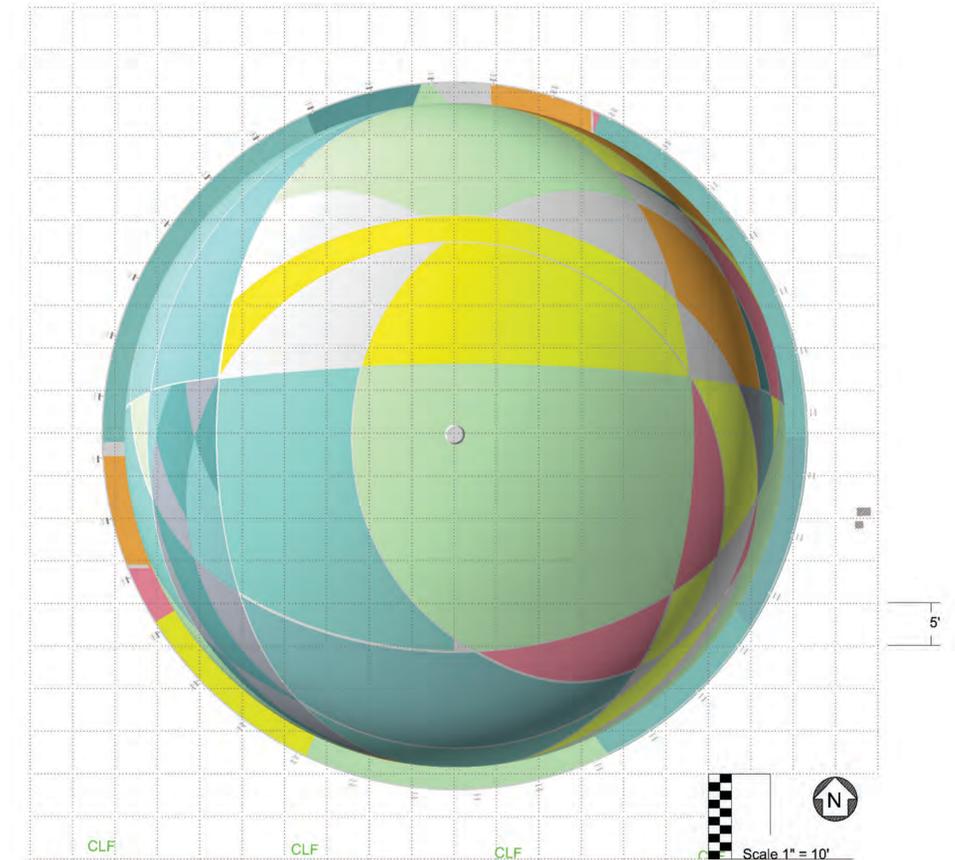
RAL # and name	Sq Ft (approximate)
RAL 5024 Pastel Blue	7830 SqFt
RAL 6034 Pastel Turquoise	3710 SqFt
RAL 1016 Sulfer Yellow	2560 SqFt
RAL 6019 Pastel Green	9220 SqFt
RAL 1034 Pastel Yellow	4290 SqFt
RAL 3015 Light Pink	2264 SqFt
RAL 6027 Light Green	3820 SqFt
RAL 7035 Light Grey	1280 SqFt
RAL 9010 Pure White	590 SqFt
RAL 5014 Pigeon Blue	300 SqFt
RAL 7040 Window Grey	240 SqFt



23 Detail  
P-01 Scale 1/2" = 1'

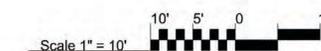


Underside of tower

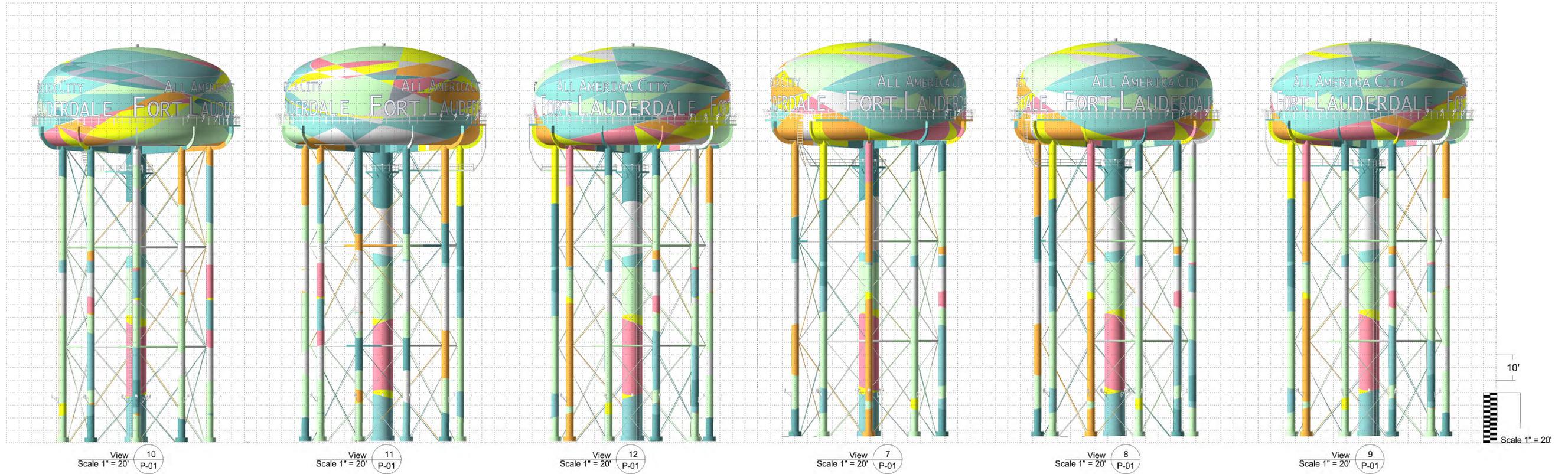
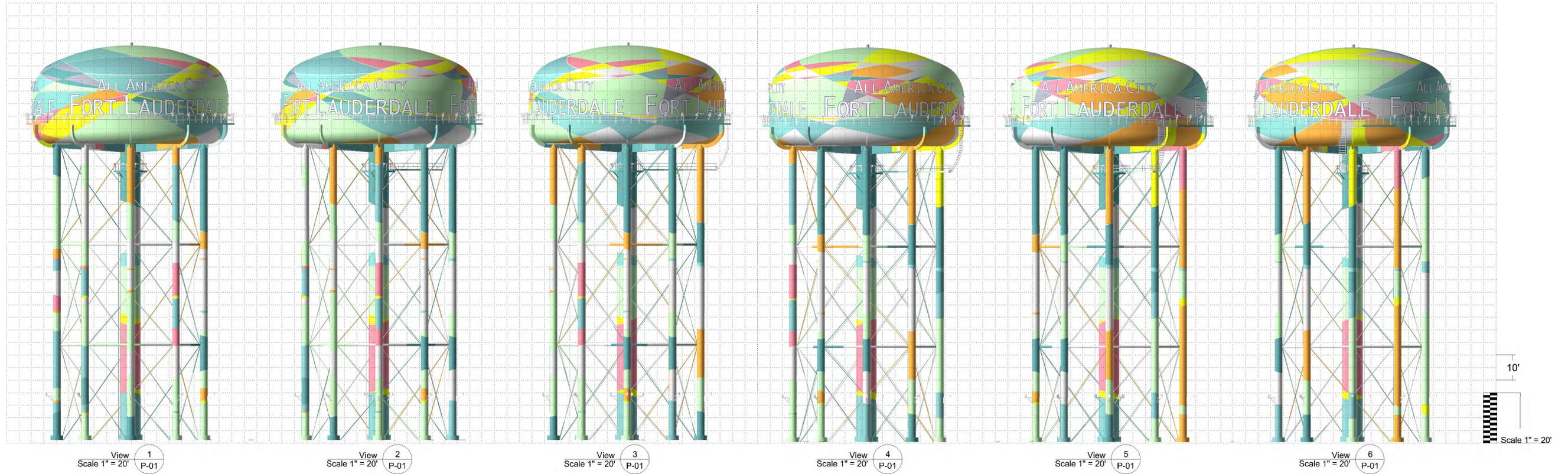


Top of Tower

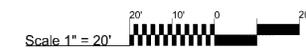
Note  
- Views are displayed on a 5' by 5' grid



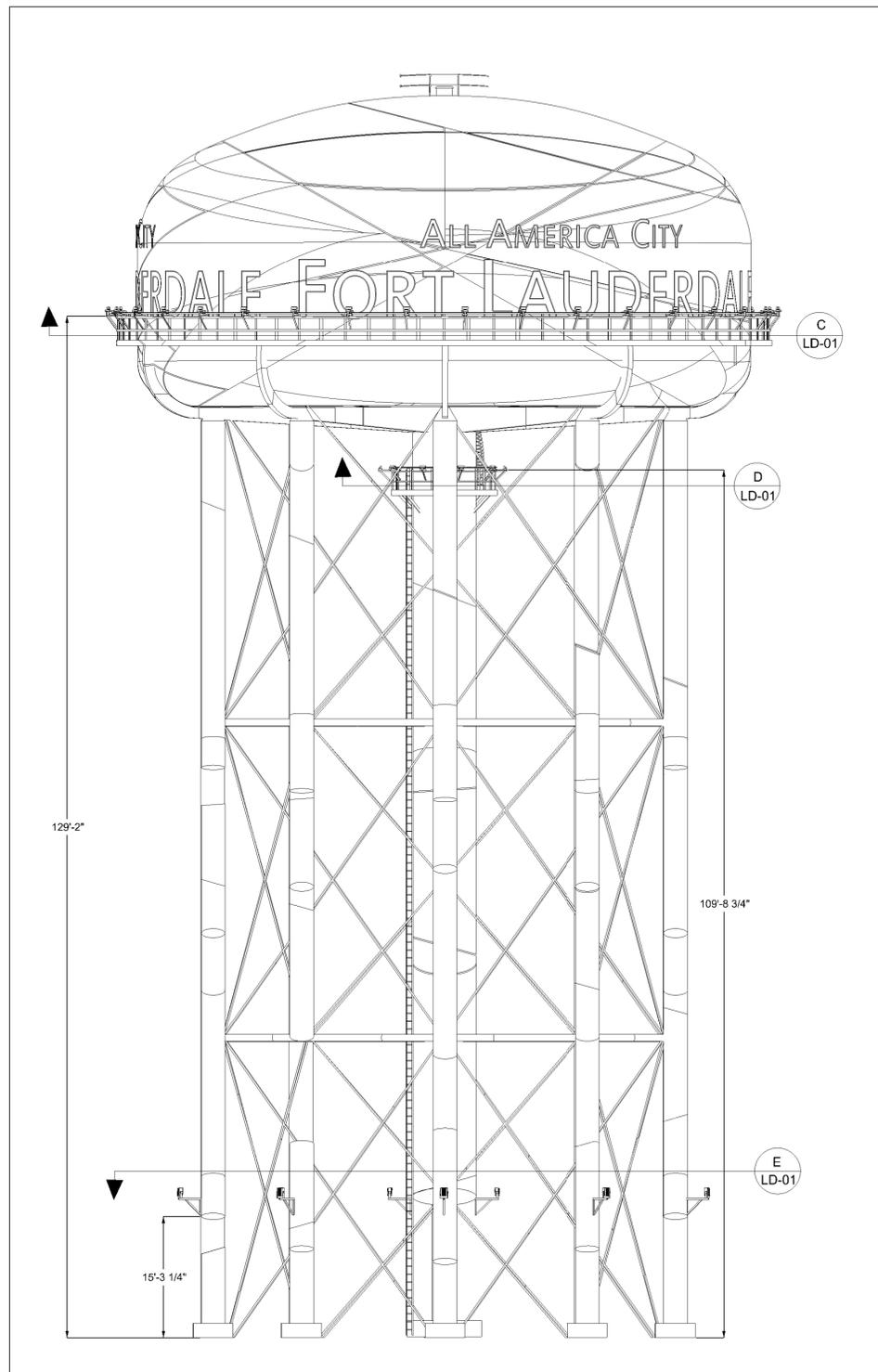
Art Light Space	Title	Date	Project
	Tower Lights	05/11/2016	Fort Lauderdale Water Tower Restoration 11887
	Sheet No. 2	Drawn/Checked	Desc. Lettering detail and color key
	Series No. P-01	Units Standard	Rev.
	Scale Varies	Draw. Sr. 36" x 24"	Rev.



Note  
- Views are displayed on a 5' by 5' grid  
Designed by Art Light Space



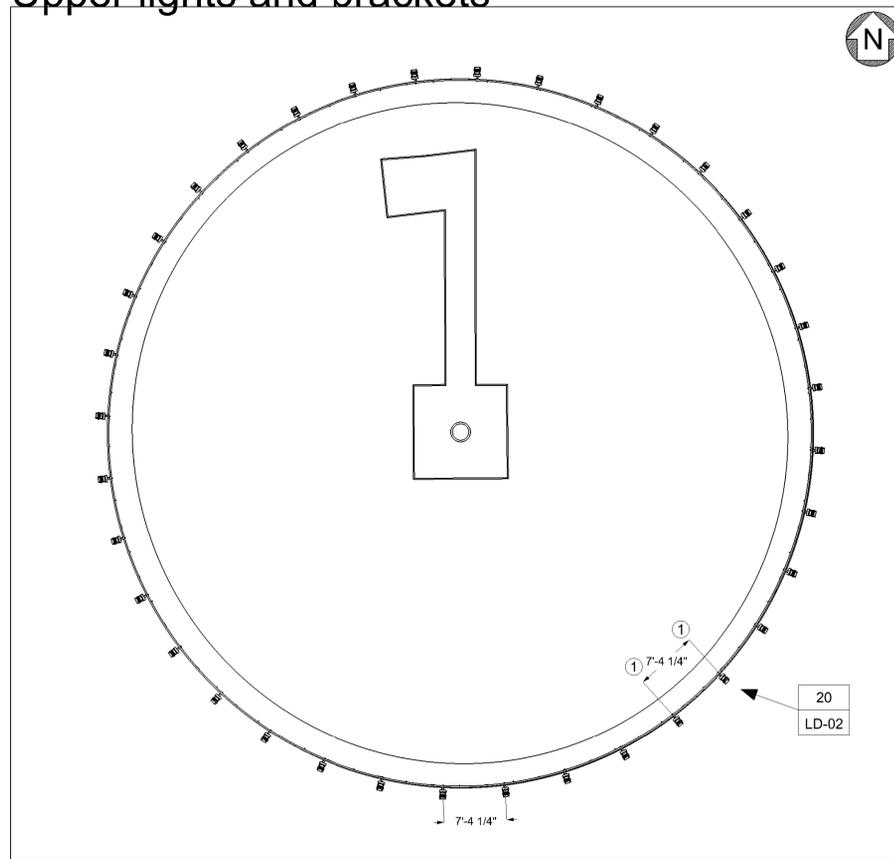
Art Light Space	Title	Date	Project
	Tower Lights	05/11/2016	Fort Lauderdale Water Tower Restoration 11887
	Sheet No. 3	Drawn/Checked	
	Series No. P-02	Units Standard	Lettering detail and color key
	Dwg. Size 36" x 24"	Scale 1" = 20'	



- Notes
- 1) 72 light fixtures shall be mounted to 36 fixture brackets and mounted at an even spacing around the tower railing. The fixture brackets shall be made identical.
  - 2) 10 light fixtures shall be mounted to 10 fixture brackets and mounted at an even spacing around the middle water tower railing. Fixtures will be centered in between the legs of the water tower where possible. The fixture brackets shall be made identical.
  - 3) One fixture will need to be positioned off center because of the catwalk.
  - 4) 14 light fixtures shall be mounted to 14 fixture brackets and mounted one per leg with four mounted to the center column.
  - 5) The 14 brackets shall be made identical

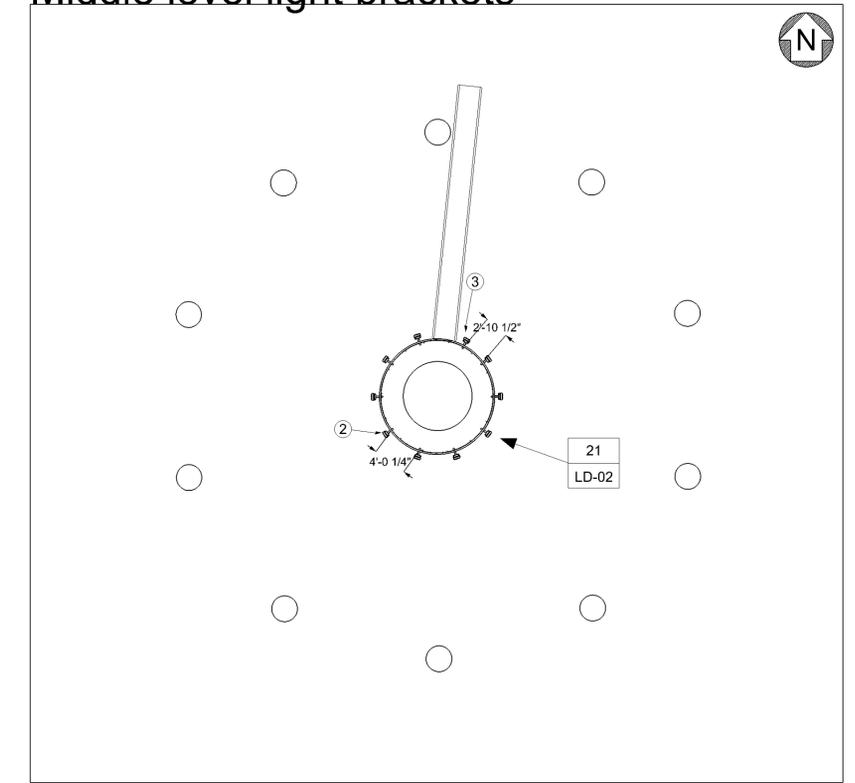
View 1 P-01  
Scale 1" = 10'

### Upper lights and brackets



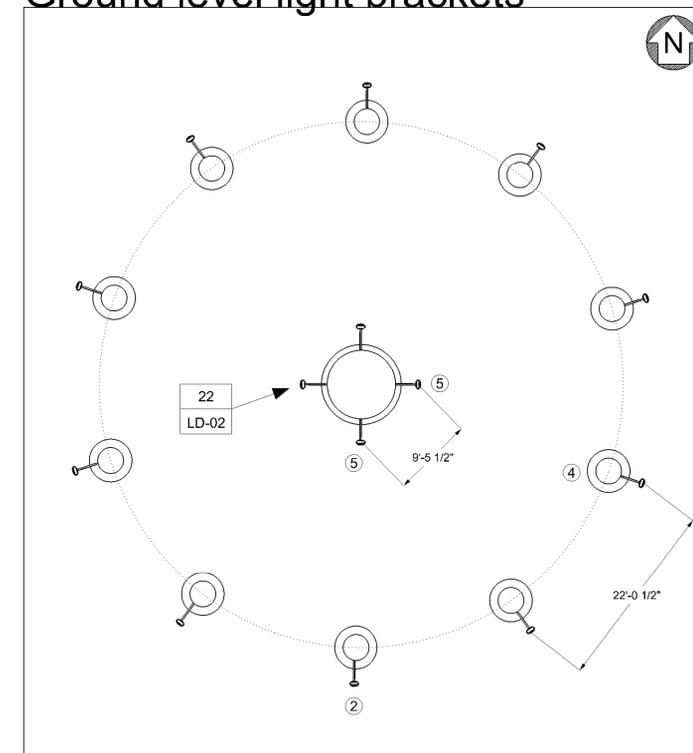
Section C LD-01  
Scale 1" = 10'

### Middle level light brackets



Section D LD-01  
Scale 1" = 8'

### Ground level light brackets



Section E LD-01  
Scale 1" = 10'

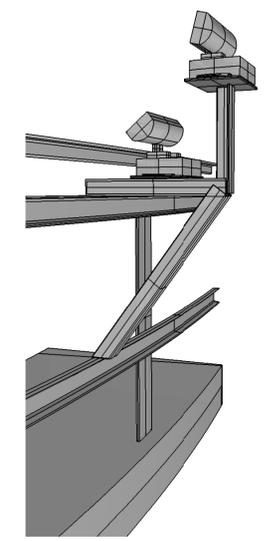
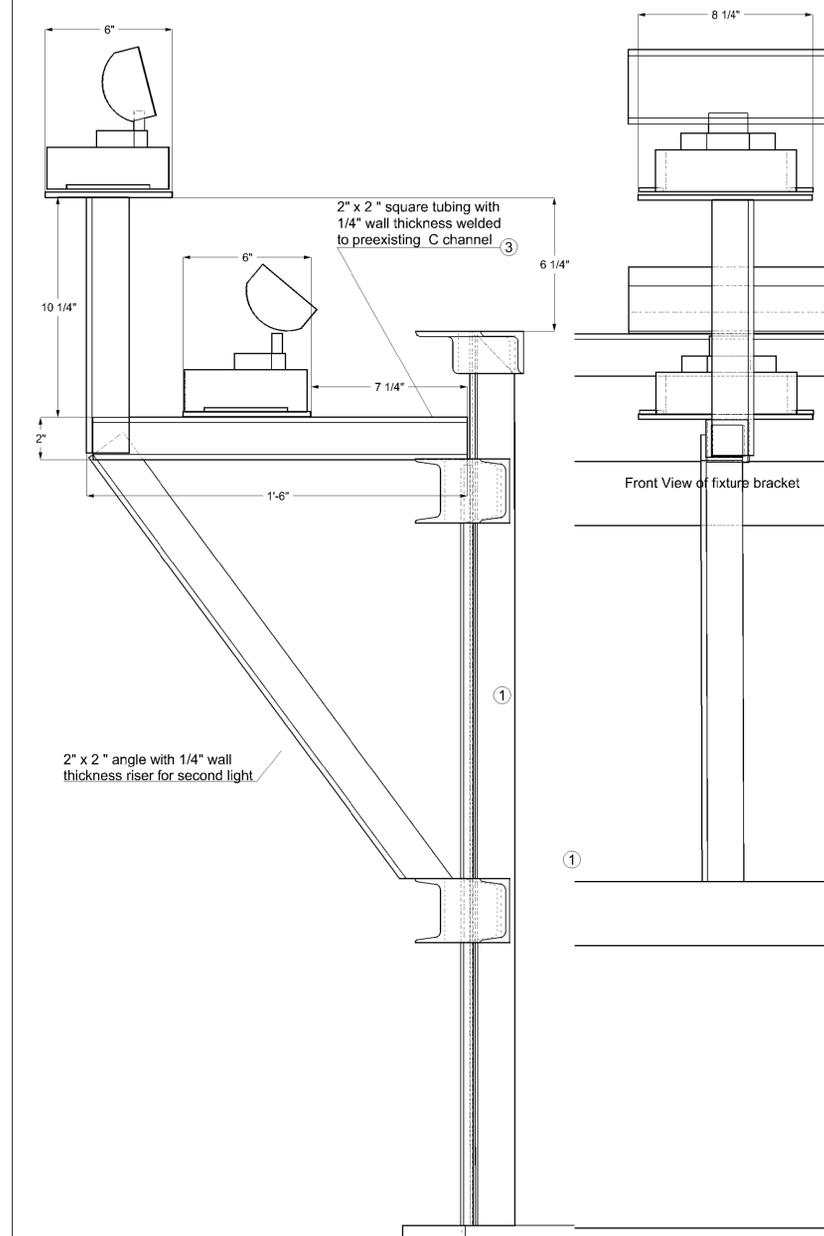
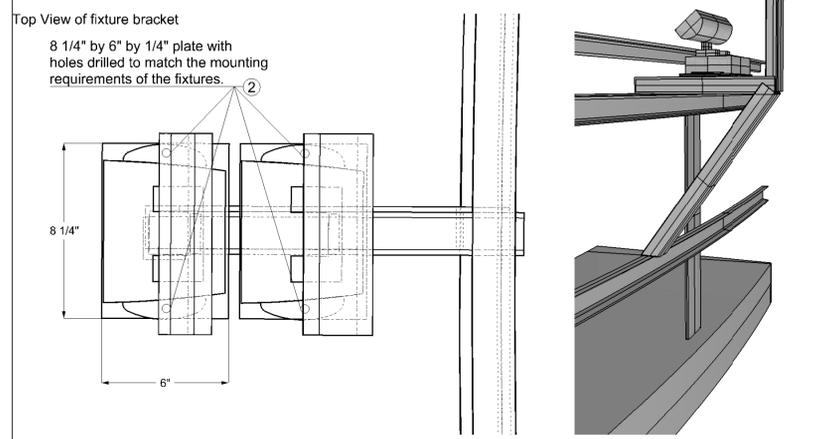


Scale 1" = 10'

Art Light Space		Title	Date	Project
		Tower Lights	05/11/2016	Fort Lauderdale Water Tower Restoration 11887
		Sheet No.	4	Drawn/Checked
		Series No.	LD-01	Light and light bracket layout
		Units	Standard	Rev.
		Scale	36" x 24"	Rev.
		Scale	1" = 10'	Rev.

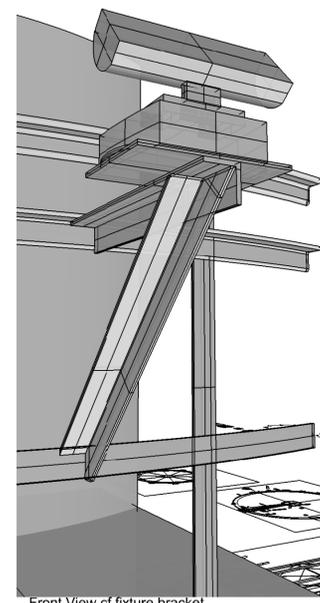
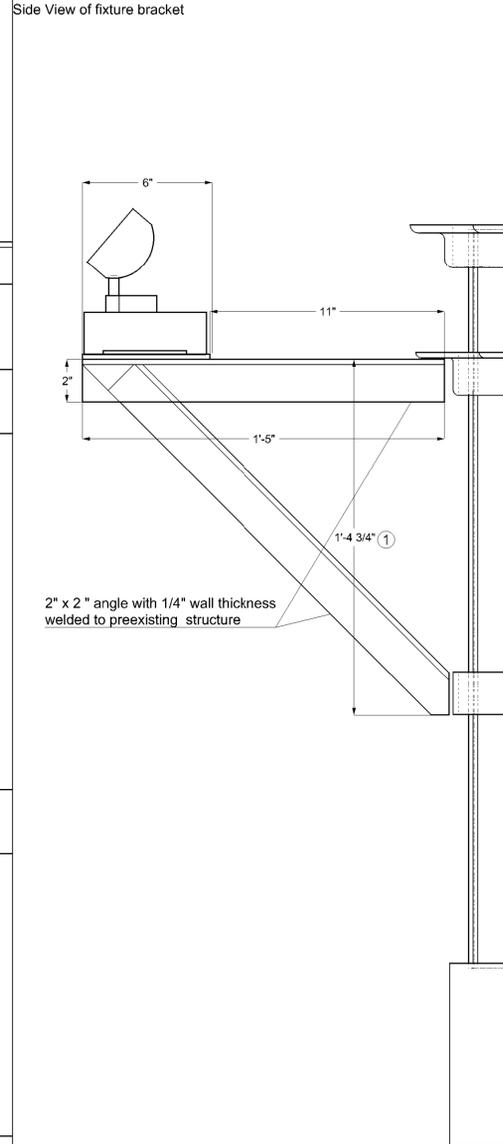
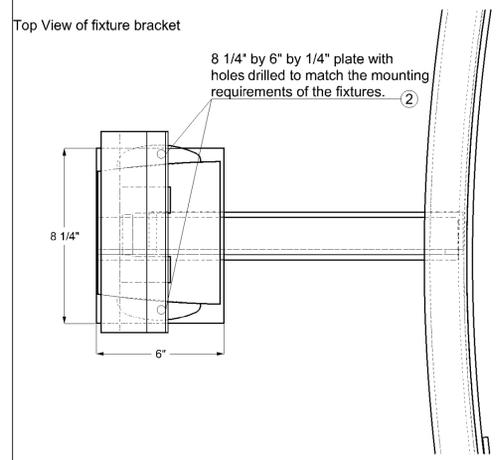
# Tower Lights Upper lights and bracket

Detail 20  
Scale 2" = 1'  
LD-01



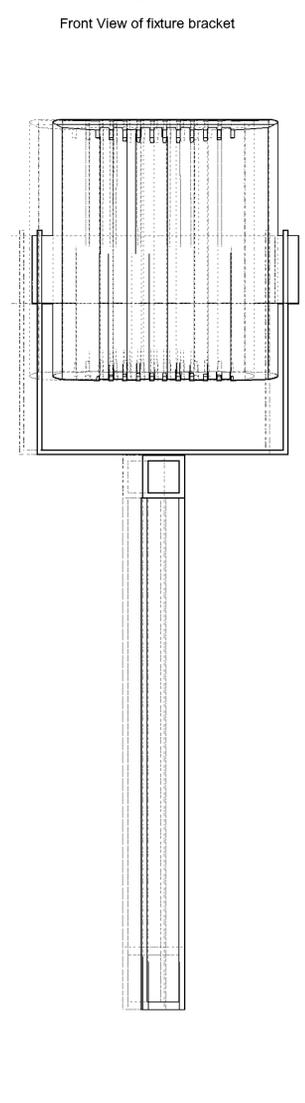
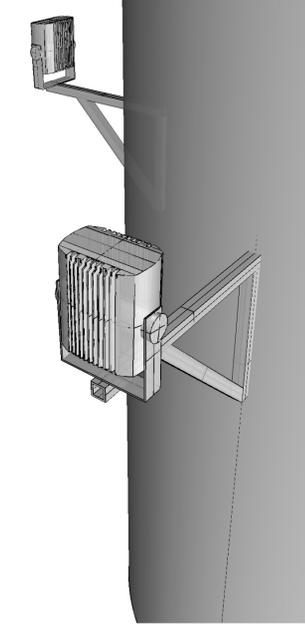
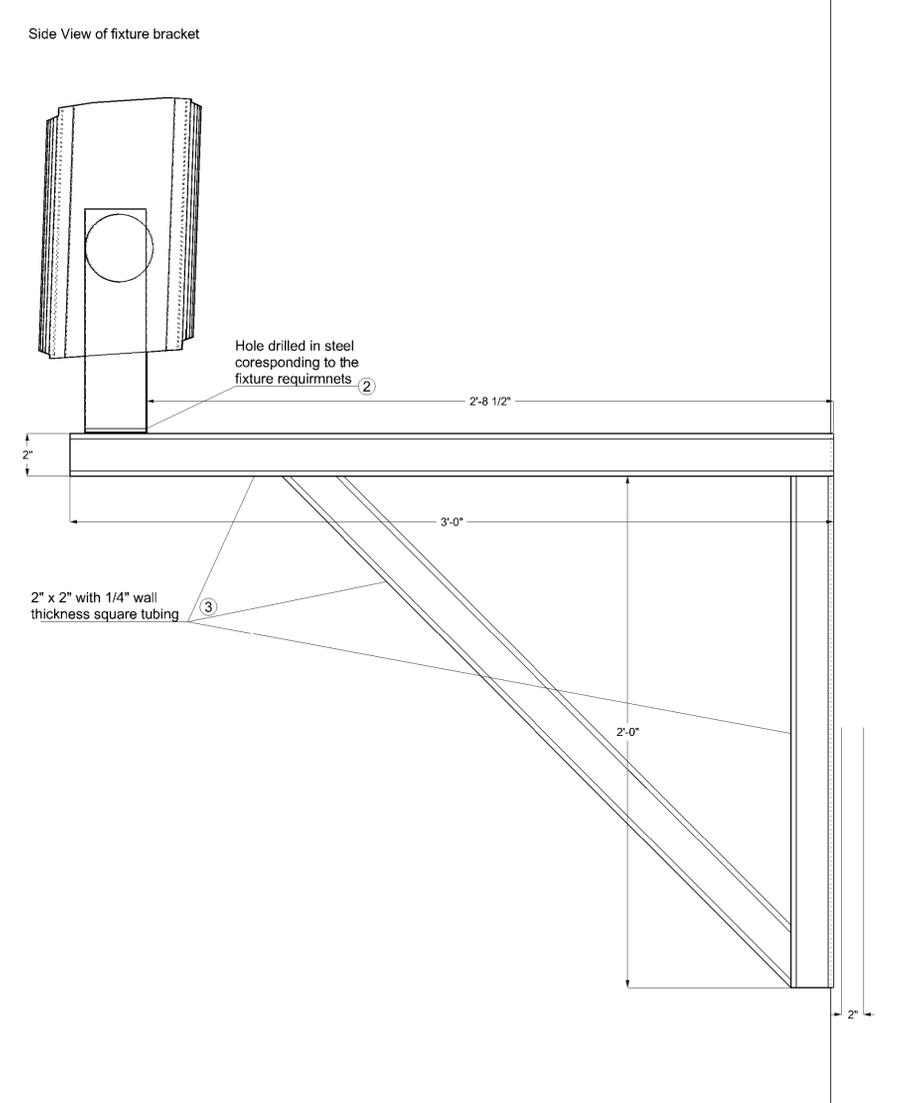
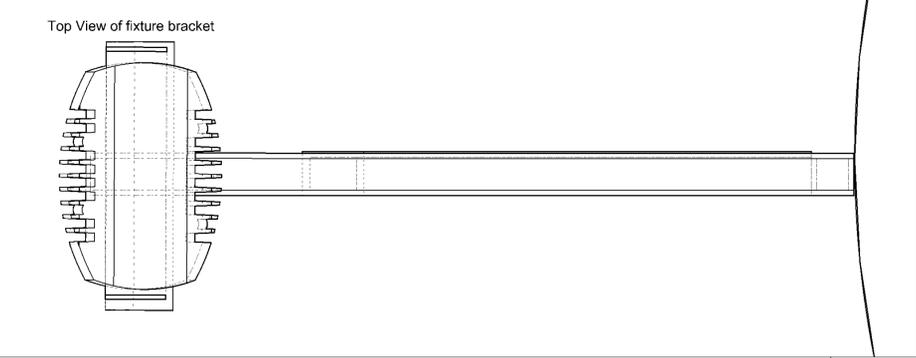
# Middle level light brackets

Detail 21  
Scale 2" = 1'  
LD-01

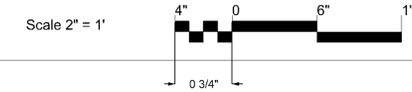


# Ground level light brackets

Detail 22  
Scale 2" = 1'  
LD-01

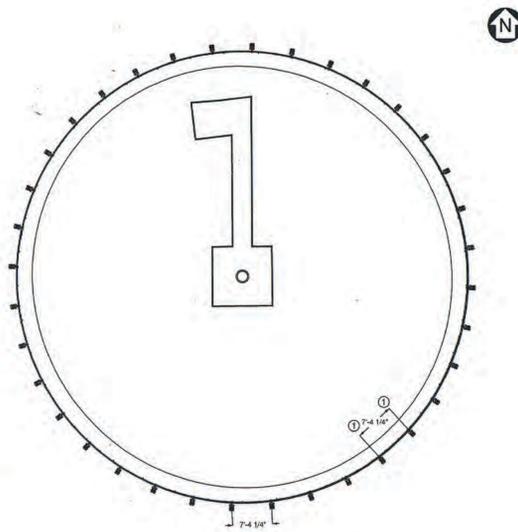


- Notes
- 1) Contractor shall verify tower railing dimensions and adjust the fixture bracket accordingly.
  - 2) Contractor shall verify fixture dimensions and adjust the mounting plate to match.
  - 3) All tube ends must be sealed air tight.

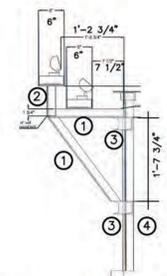


Art Light Space

Title	Date	Project
Tower Lights	05/11/2016	Fort Lauderdale Water Tower Restoration 11887
Sheet No.	Drawn/Checked	Disc.
5		light bracket detail
Series No.	Units	Rev.
LD-02	Standard	
Scale	Dwg. S.	Rev.
1 1/2" = 1'	36" x 24"	



**PLAN - TOP RING**  
ELEV. 127'-6"± NTS



- ① TS 2x2x1/4" STEEL TUBES WELD W/ 3/16" FILLET - ALL AROUND 4" MIN.WELD.
- ② L2x2x1/4" - WELD W/ 3/16" FILLET - ALL AROUND 4" MIN.WELD.
- ③ EXIST STRUCTURE - EXIST. CHANNELS OR TUBES
- ④ EXIST. STEEL WATER TOWER

WELD ALL INTERSECTING STEEL ANGLES (OR TUBES) TO EACH OTHER. & AT EXIST. STRUCTURAL MEMBERS. TYP.

**DETAIL "A"**  
• ELEV. 127'-6"± NTS

**WINDLOAD CALCULATION:**

EPA - LIGHT FIXTURE - 2 SQ FT MAX  
 WIND PRESSURE : 75 PSF (CONSERVATIVE)  
 $F = P \times A = 2 \times 75 = 150 \text{ LBS}$   
 ONE INCH OF 3/16" WELD =  $3 \times 900 \text{ LBS} = 2,700 \text{ LBS}$   
 2700 x 4" OF WELD = 10,000 LBS  
 F.S.> 6.0 SAY O.K.

**WEIGHTS OF LIGHT FIXTURES, STEEL L, CONDUITS & BALLAST:**

TOTAL COMBINED WEIGHT OF EACH LIGHT FIXTURE (25 LBS) AND STEEL ANGLE PER BRACKET < 180 LBS (MAX.)

96 TOTAL BRACKETS/LIGHTS ADDED TO TOWER  
 NEGLIGIBLE TO DESIGN & IMPACT ON EXIST. STRUCTURE.

**GENERAL NOTES :**

- GENERAL**
- THESE NOTES ARE NOT INTENDED TO REPLACE THE PROJECT SPECIFICATIONS. IN CASE OF CONFLICT BETWEEN THE REQUIREMENTS OF THE SPECIFICATIONS AND THESE NOTES, THE MORE STRINGENT REQUIREMENT SHALL APPLY.
- DIMENSIONS**
- PRIOR TO CONSTRUCTION, CONTRACTOR SHALL VERIFY ALL DIMENSIONS ON SITE AND REPORT ANY DISCREPANCIES TO THE ENGINEER.
  - THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS GIVEN ON THE STRUCTURAL DRAWINGS RELATING TO THE GRID LINES, COLUMN AND WALL LOCATIONS, STRUCTURAL AND FINISH FLOOR ELEVATIONS, MEMBER SIZES, ETC. WITH THE ART LIGHT SPACE INC DRAWINGS PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER/ARCHITECT OF ANY DISCREPANCY.
  - THE CONTRACTOR SHALL REFER TO THE ENGINEER FOR ANY DIMENSIONS NOT SHOWN ON THE DRAWINGS. SCALING OF DRAWINGS SHALL NOT BE USED TO OBTAIN OR VERIFY ANY DIMENSIONS.
- SHOP DRAWINGS**
- REVIEW OF SHOP DRAWINGS BY THE ENGINEER IS LIMITED TO COMPLIANCE WITH THE DESIGN CONCEPT AND INFORMATION GIVEN IN THE CONTRACT DOCUMENTS. CONTRACTOR IS SOLELY RESPONSIBLE FOR DIMENSIONS, QUANTITIES, PERFORMANCE, SAFETY, COORDINATION WITH OTHER WORK, AND ALL OTHER REQUIREMENTS OF THE CONTRACT DOCUMENTS. REVIEW DOES NOT AUTHORIZE CHANGE TO CONTRACT DOCUMENTS UNLESS STATED SPECIFICALLY IN A SEPARATE LETTER OR CHANGE ORDER.
  - THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE ENGINEER FOR HIS REVIEW IN ACCORDANCE WITH A SCHEDULE OF SUBMITTAL ACCEPTABLE TO THE ENGINEER. THESE SHOP DRAWINGS SHALL BE COMPLETELY REVIEWED AND ACCEPTED BY THE CONTRACTOR PRIOR TO SUBMISSION TO THE ENGINEER. THE DATA SHOWN ON THE SHOP DRAWINGS SHALL BE COMPLETE WITH RESPECT TO DIMENSIONS, DESIGN CRITERIA INCLUDING, WHEN REQUIRED, ALL NECESSARY CALCULATIONS DULY SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF FLORIDA.
  - SUBMIT SHOP DRAWINGS FOR ALL STRUCTURAL STEEL BRACKETS FOR LIGHT FIXTURES TYPICAL.

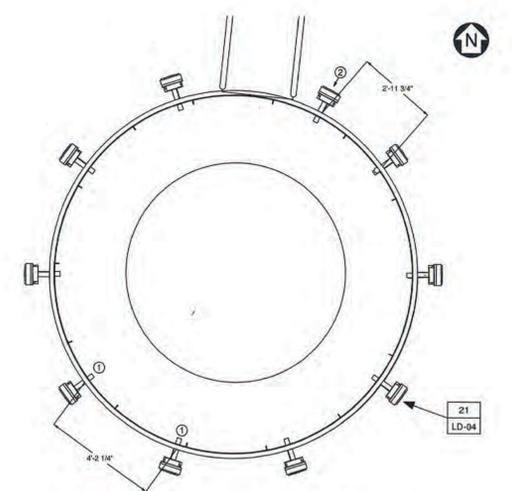
**BASIS OF DESIGN**

BUILDING CODE: FLORIDA BUILDING CODE - 2014 EDITION WITH PERTINENT ADDENDA.  
 DESIGN WIND LOADS ARE BASED UPON A WIND VELOCITY OF 175 MPH IN ACCORDANCE WITH THE ASCE 7-10 EXP.= C, I.F. =1.0 "SIGN STRUCTURE"

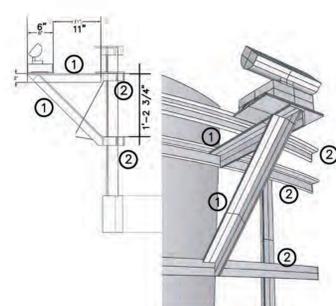
- STRUCTURAL STEEL**
- ALL STRUCTURAL STEEL SHALL BE ASTM A-36 (MIN.), ANCHOR BOLTS ASTM A-307, STRUCTURAL TUBING A500 GRADE B, FY = 46KSI
  - ALL FABRICATION, WORKMANSHIP, ERECTION AND DETAILS SHALL BE IN ACCORDANCE WITH AISC SPECIFICATIONS.
  - ALL WELDING SHALL BE IN ACCORDANCE WITH AWS USING E-70 ELECTRODES (MIN.). ALL WELDERS SHALL BE QUALIFIED AND CERTIFIED FOR THE TYPE OF WELDING PERFORMED.
  - ALL STEEL SHALL BE COATED WITH (1) COAT OF CORROSION INHIBITING PAINT.
  - WEDGE ANCHORS (WA) SHALL BE 5/8" HILTI WITH 4" EMBEDMENT UNLESS NOTES OTHERWISE.

**PENETRATIONS AND CONDUITS**

1. CHASES, SLEEVES, OPENINGS, OR OTHER PENETRATIONS IN STRUCTURAL CONCRETE ELEMENTS NOT SPECIFICALLY SHOWN ON THE STRUCTURAL DRAWINGS SHALL NOT BE PERMITTED WITHOUT PRIOR ACCEPTANCE IN WRITING BY THE ENGINEER.



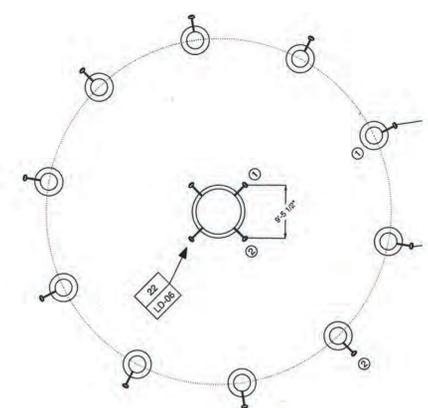
**PLAN - MIDDLE RING**  
ELEV. 109'-6"± NTS



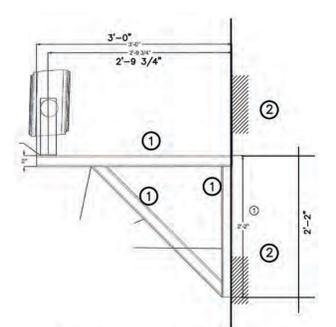
- ① L2x2x1/4" - WELD W/ 3/16" FILLET - ALL AROUND 4" MIN.WELD.
- ② EXIST STRUCTURE - EXIST. CHANNELS OR TUBES

WELD ALL INTERSECTING STEEL ANGLES TO EACH OTHER. & AT EXIST. STRUCTURAL MEMBERS. TYP.

**DETAIL "B"**  
• ELEV. 109'-6"± NTS



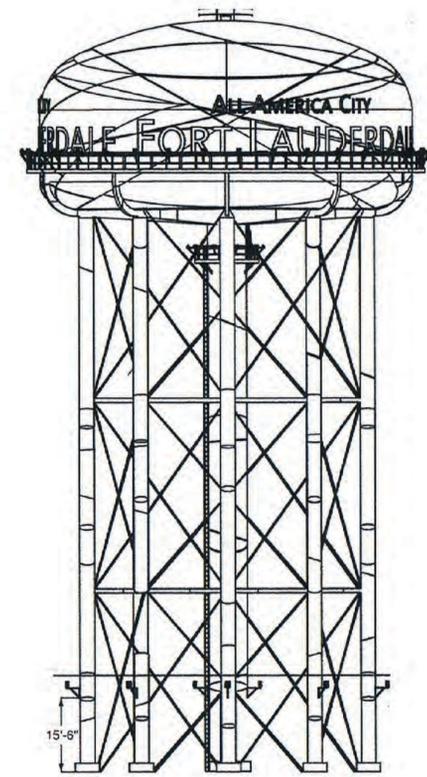
**PLAN - LOWER RING**  
ELEV. 15'-6"± NTS



- ① TS 2x2x1/4" STEEL TUBES WELD W/ 3/16" FILLET - ALL AROUND 4" MIN.WELD.
- ② EXIST. STEEL WATER TOWER

WELD ALL INTERSECTING STEEL ANGLES TO EACH OTHER. & AT EXIST. STRUCTURAL MEMBERS. TYP.

**DETAIL "C"**  
• ELEV. 15'-6"± NTS



**ELEVATION**  
NTS



**FINISHED ELEVATION**  
NTS



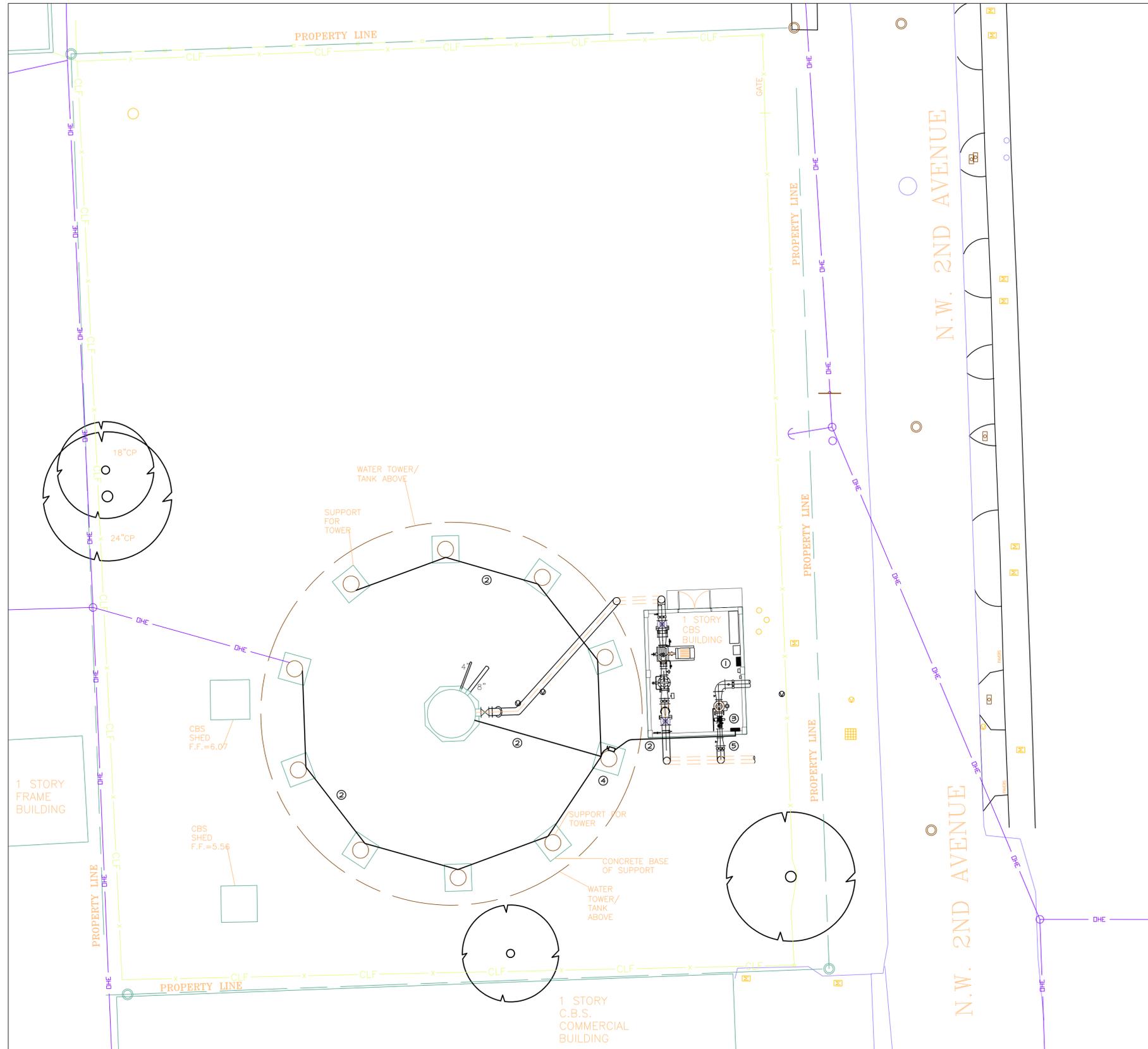
REVISIONS	BY
7-8-16	
8-18-16	



DESIGNED BY ART LIGHT SPACE  
 THESE DRAWINGS ARE INSTRUMENTS OF SERVICE AND SHALL REMAIN THE PROPERTY OF KING STRUCTURAL GROUP, INC. ALL REPRODUCTION IS PROHIBITED WITHOUT THE WRITTEN PERMISSION OF KING, INC.

**WATER TOWER RENOVATION - VOLUME B**  
**CITY OF FT. LAUDERDALE**  
 Ft. Lauderdale, Florida

DRAWN:	PAK
CHECKED:	PAK
DATE:	6/18/16
SCALE:	SEE PLAN
JOB NO.	16570
SHEET	5-1R
<b>PLANS</b>	



**SCOPE OF WORK:**

THE SCOPE OF WORK INCLUDED UNDER THIS PROJECT IS AS FOLLOWS:

INSTALL LIGHTING FIXTURES ON THE WATER TOWER TO ILLUMINATE THE TOWER. REFER TO DETAILS ON SHEET E-5 FOR ADDITIONAL INFORMATION.

PROVIDE CONDUIT AND WIRING FROM THE POWER PANEL LOCATED IN THE ELECTRICAL ROOM TO FEED THE LIGHTING FIXTURES AS SHOWN ON THE ELECTRICAL DRAWINGS.

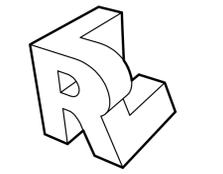
THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING ALL OF THE ELECTRICAL EQUIPMENT SHOWN ON THESE DRAWINGS.

**PLAN NOTES:**

- APPROXIMATE LOCATION OF EXISTING ELECTRICAL PANEL. SEE ELECTRICAL ROOM LAYOUT ON SHEET E-4 FOR ADDITIONAL INFORMATION.
- APPROXIMATE ROUTING OF NEW POWER AND SIGNAL CONDUITS. REFER TO ELECTRICAL RISER DIAGRAM ON SHEET E-6 FOR CONDUIT REQUIREMENTS. VERIFY EXACT LOCATION IN THE FIELD PRIOR TO ROUGH-IN.
- APPROXIMATE LOCATION OF LIGHTING CONTROL PANEL. SEE ELECTRICAL ROOM LAYOUT ON SHEET E-4 FOR ADDITIONAL INFORMATION.
- DISCONNECT SWITCH FOR POWER FEED TO LIGHTING FIXTURES. REFER TO RISER DIAGRAM FOR ADDITIONAL INFORMATION.
- COORDINATE CONDUIT LOCATION WITH EXISTING 16"Ø WATER LINES.

**RONALD L. LEVINSON, P.E.**  
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 Fax: (561)582-3700  
 LevinsonPE@gmail.com

FL P.E. NO. 34871



**PROJECT:**

# WATER TOWER LIGHTING

The City of Fort Lauderdale

PCN: 4942-34-07-6430  
 625 NW 2 Ave  
 Fort Lauderdale  
 Florida  
 33311

Date: 08-01-2016  
 Drawn By: RLL  
 Checked By: RLL  
 Project No: 160202  
 Revised:  
 BID SET 3-3-2017

BID SET

SHEET NO. 1 of 8

# E-0

1 SITE PLAN  
 E-0

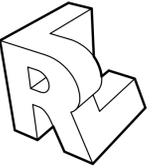
SCALE: 1"=10'-0"

**ELECTRICAL SHEET LIST:**

E-0	ELECTRICAL SITE PLAN
E-1	GROUND LEVEL ELECTRICAL PLAN
E-2	MID-LEVEL ELECTRICAL PLAN
E-3	UPPER LEVEL ELECTRICAL PLAN
E-4	ENLARGED ELECTRICAL ROOM PLAN
E-5	RISER DIAGRAM & DETAILS
E-6	ELECTRICAL SCHEDULES
E-7	AREA PLAN & SECURITY CAMERA DETAIL

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PROJECT:

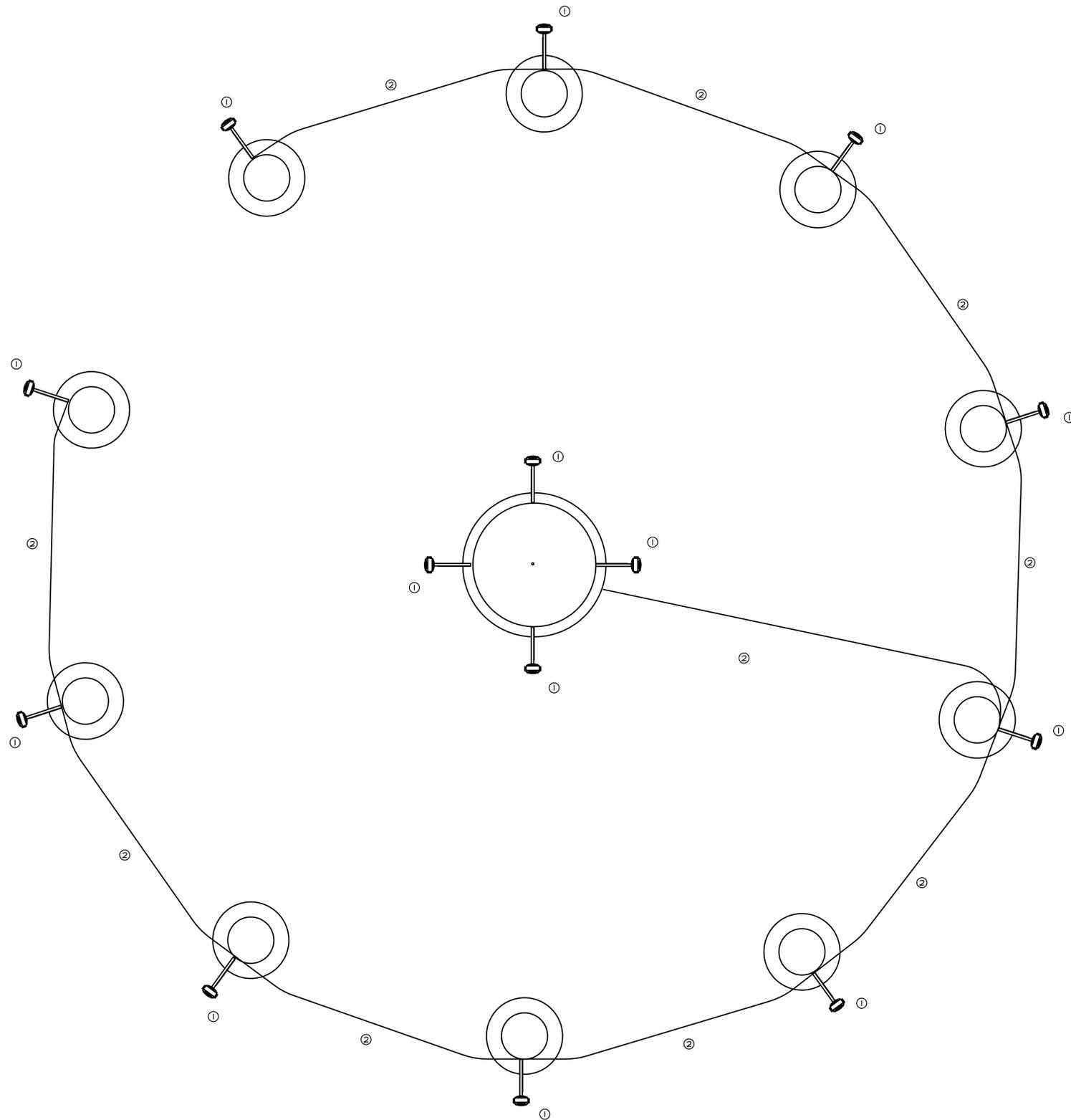
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SHEET NO. 2 of 8



- PLAN NOTES:**
- ① NEW LIGHTING FIXTURE ATTACHED TO TOWER SUPPORT. TIE TO CIRCUIT PANELS 5601-28,30 VIA LIGHTING CONTROL PANEL. SEE MOUNTING DETAILS AND LIGHTING FIXTURE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
  - ② POWER AND CONTROL CONDUIT FEED TO LIGHTING FIXTURES. SEE RISER DIAGRAM FOR ADDITIONAL INFORMATION.

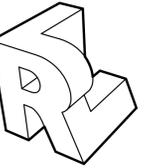
1 LOWER LEVEL ELECTRICAL PLAN  
E-1

SCALE: 1/4"=1'-0"



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PROJECT:

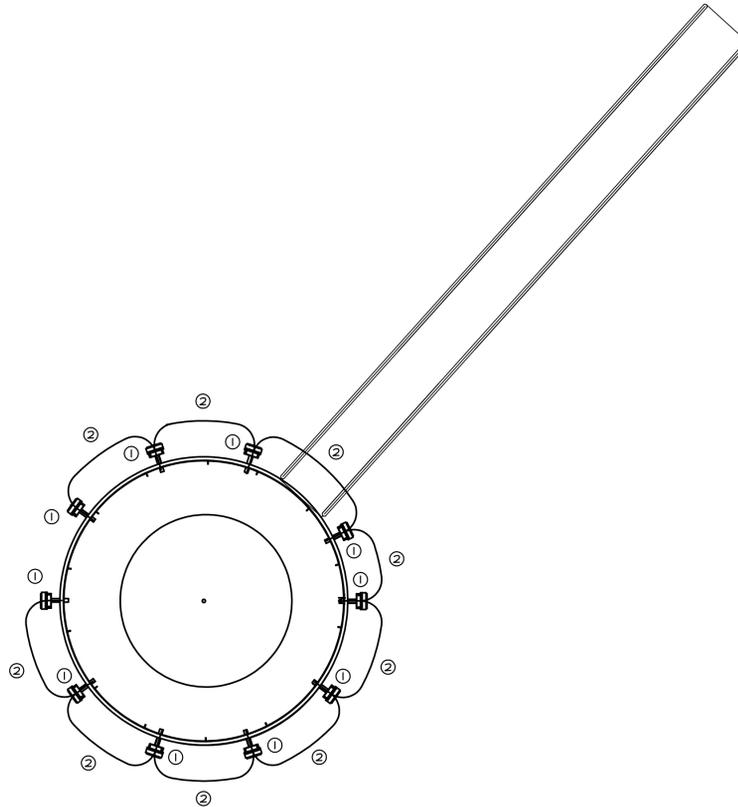
# WATER TOWER LIGHTING

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Project No.: 160202  
Revised:  
BID SET 3-3-2017

BID SET  
SHEET NO. 3 of 8



- PLAN NOTES:**
- ① NEW LIGHTING FIXTURE ATTACHED TO TOWER SUPPORT. TIE TO CIRCUIT PANELS 5601-28,30 VIA LIGHTING CONTROL PANEL. SEE MOUNTING DETAILS AND LIGHTING FIXTURE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
  - ② POWER AND CONTROL CONDUIT FEED TO LIGHTING FIXTURES. SEE RISER DIAGRAM FOR ADDITIONAL INFORMATION.

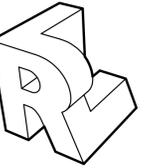
1 MID LEVEL ELECTRICAL PLAN  
E-2

SCALE: 1/4"=1'-0"



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PROJECT:

# WATER TOWER LIGHTING

The City of Fort Lauderdale

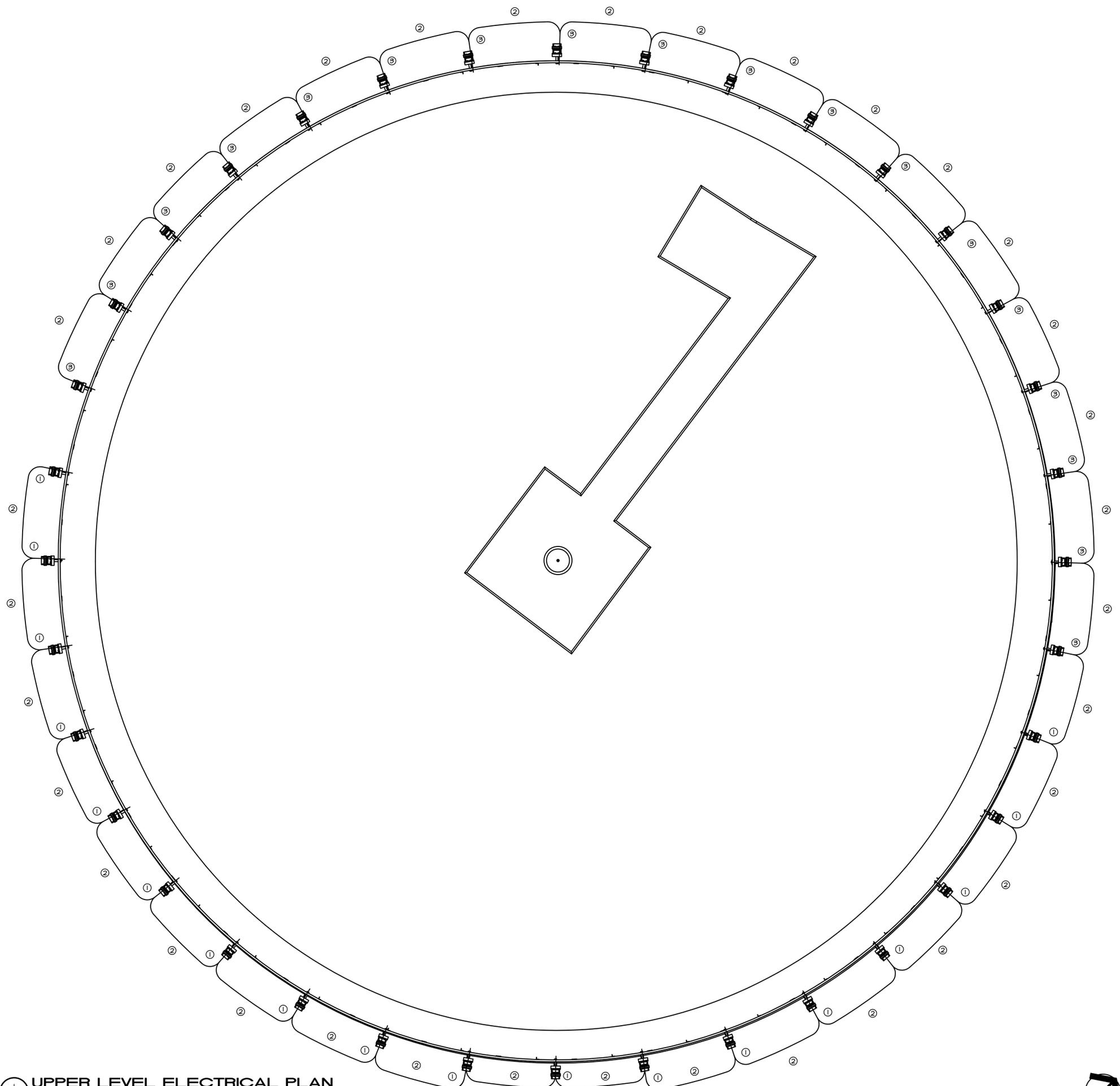
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BID SET

SHEET NO. 4 of 8

# E-3



UPPER LEVEL ELECTRICAL PLAN

1  
E-3

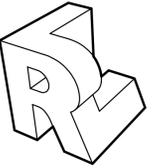
SCALE: 1/4"=1'-0"



- PLAN NOTES:**
- ① NEW LIGHTING FIXTURE ATTACHED TO TOWER SUPPORT. TIE TO CIRCUIT FNLX5601-20.22' VIA LIGHTING CONTROL PANEL. SEE MOUNTING DETAILS AND LIGHTING FIXTURE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
  - ② POWER AND CONTROL CONDUIT FEED TO LIGHTING FIXTURES. SEE RISER DIAGRAM FOR ADDITIONAL INFORMATION.
  - ③ NEW LIGHTING FIXTURE ATTACHED TO TOWER SUPPORT. TIE TO CIRCUIT FNLX5601-24.26' VIA LIGHTING CONTROL PANEL. SEE MOUNTING DETAILS AND LIGHTING FIXTURE SPECIFICATIONS FOR ADDITIONAL INFORMATION.

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PROJECT:

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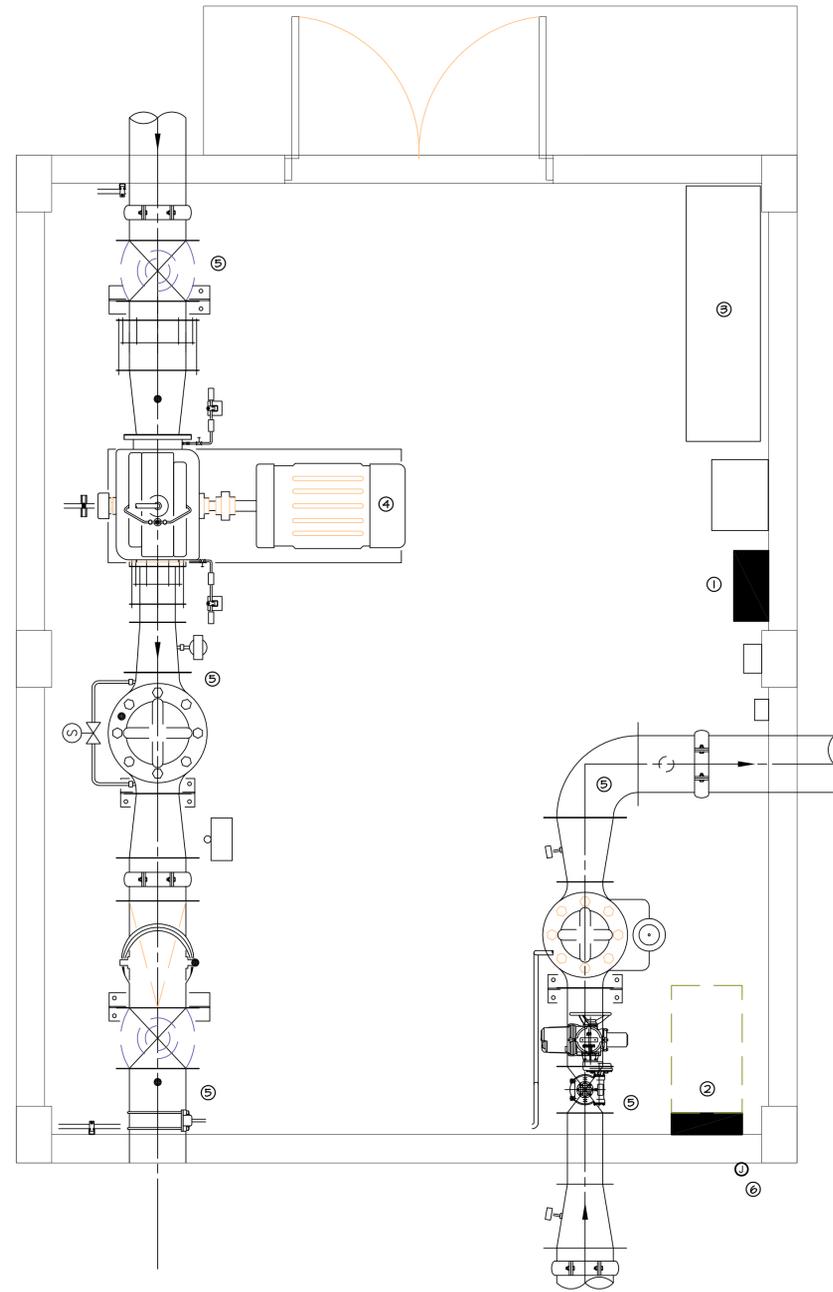


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BID SET

SHEET NO. 5 of 8

**E-4**

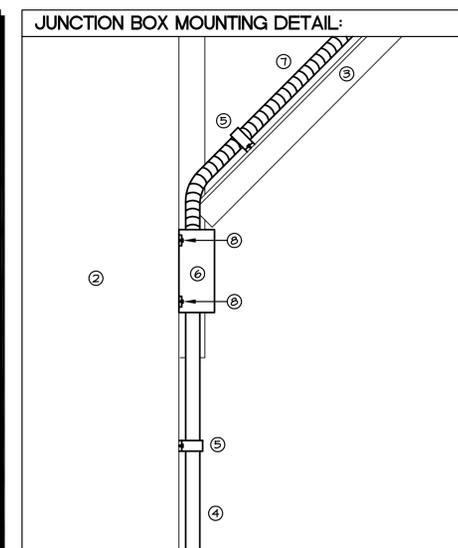
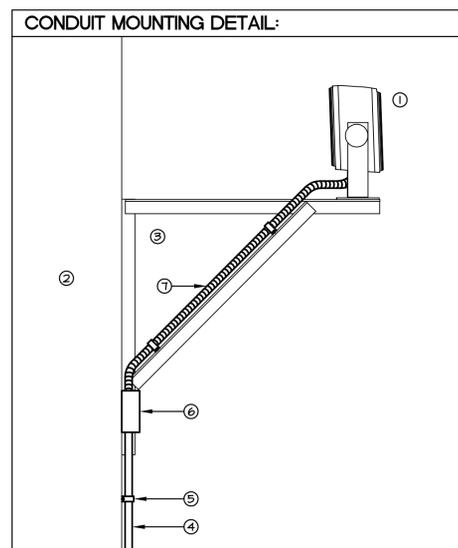
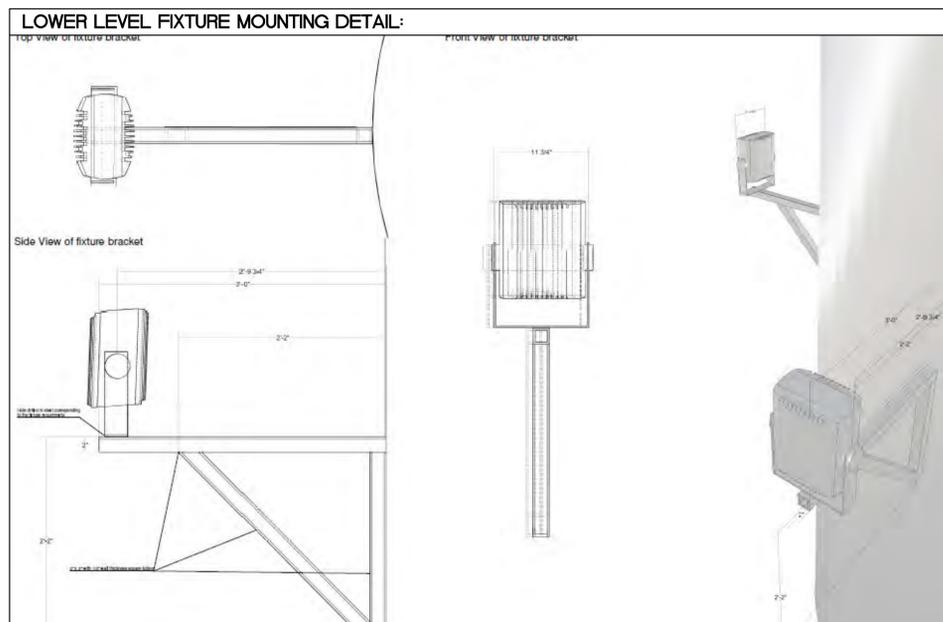
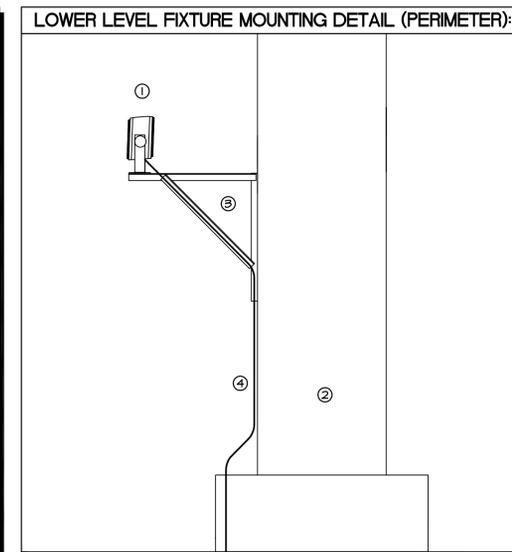
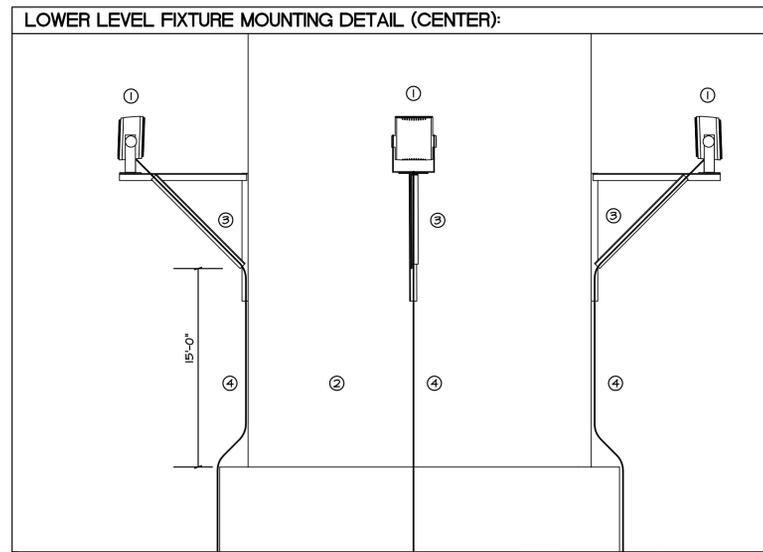
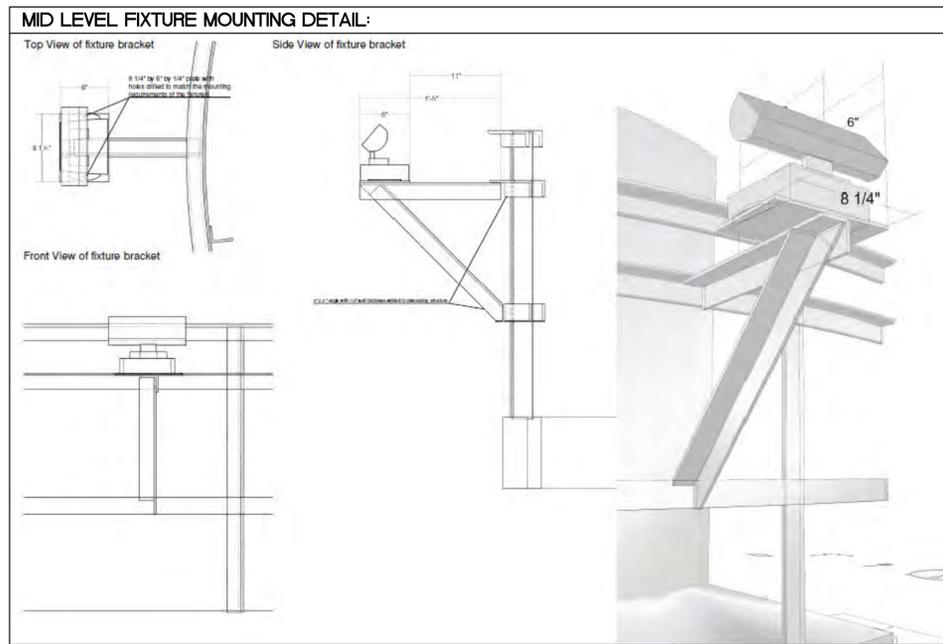
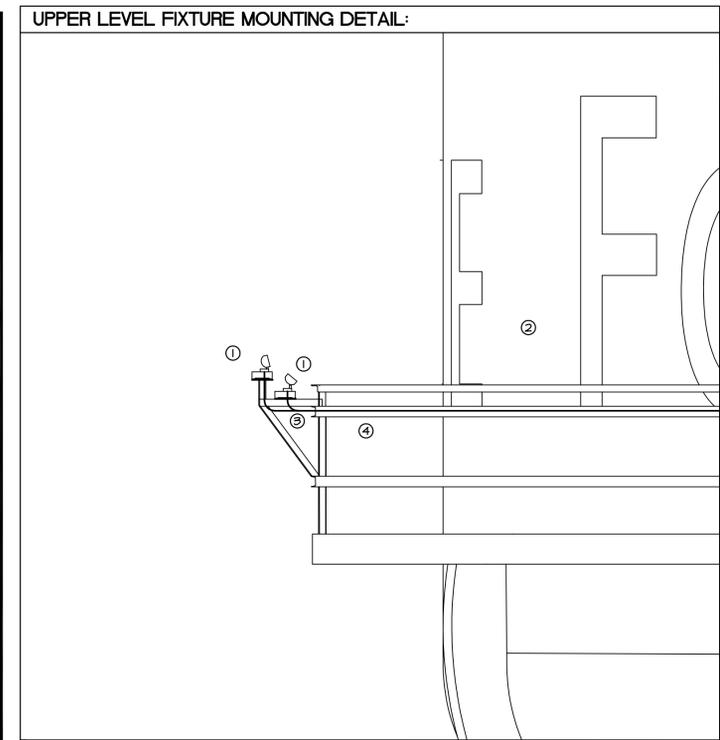
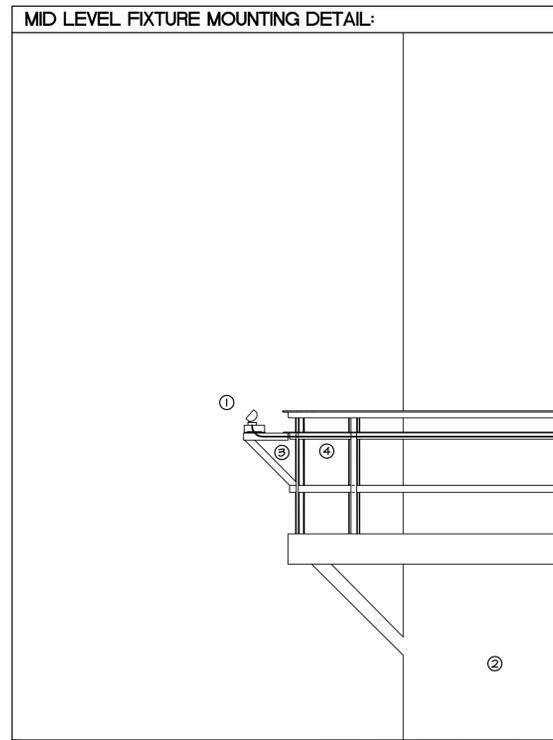
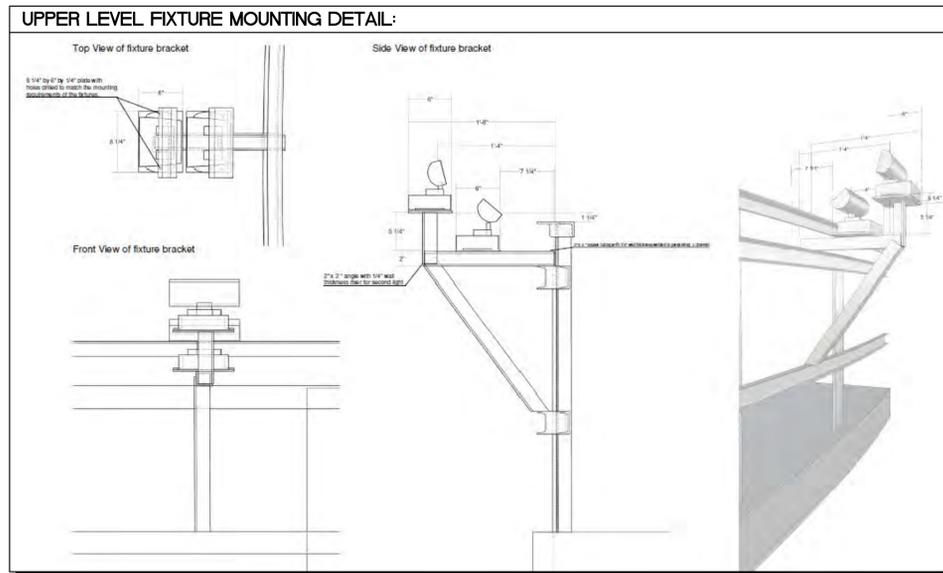


- PLAN NOTES:**
- ① EXISTING PANEL 'NXL5601' TO REMAIN. SEE SCHEDULE ON SHEET E-6 FOR ADDITIONAL INFORMATION.
  - ② NEW LIGHTING CONTROL PANEL. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
  - ③ EXISTING 'MDP' TO REMAIN.
  - ④ EXISTING PUMP TO REMAIN.
  - ⑤ EXISTING PIPING TO REMAIN.
  - ⑥ NEW WIFI REPEATER FOR SECURITY CAMERA. TIE TO CIRCUIT 'NXL5601-12'.

**2**  
E-4 **ELECTRICAL ROOM PLAN**

SCALE: 1/2" = 1'-0"

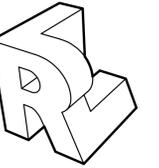




- PLAN NOTES:**
- ① LIGHTING FIXTURE. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
  - ② EXISTING WATER TOWER STRUCTURE.
  - ③ MOUNTING BRACKET FURNISHED BY LIGHTING FIXTURE MANUFACTURER. REFER TO STRUCTURAL DETAILS BY OTHERS FOR MOUNTING TO TOWER STRUCTURE.
  - ④ P.V.C. COATED GALVANIZED CONDUIT. SECURE TO STRUCTURE WITH STAINLESS STEEL HARDWARE. PROVIDE CONDUIT BODY AND SEAL TIGHT FLEXIBLE CONDUIT WHERE REQUIRED.
  - ⑤ STAINLESS STEEL TWO HOLE CONDUIT STRAP. SECURE TO STRUCTURE WITH STAINLESS STEEL SCREWS.
  - ⑥ WEATHER PROOF JUNCTION BOX FOR POWER CONNECTION TO FIXTURE. VERIFY EXACT LOCATION PRIOR TO ROUGH-IN.
  - ⑦ SEAL TIGHT FLEXIBLE CONDUIT FROM JUNCTION BOX TO FIXTURE. STRAP PER NEC REQUIREMENTS.
  - ⑧ SECURE JUNCTION BOX TO STRUCTURE USING STAINLESS STEEL HARDWARE.

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Project No: 160202

Revised:

BID SET 3-3-2017

BID SET

SHEET NO. 6 of 8

**E-5**

LOCATION: ELECTRICAL ROOM										PANELBOARD SCHEDULE										EXISTING PANEL PNLX5601									
BUS AMPS			LOAD			POLES		AMPS		CIRC.		BUS A B C			CIRC.			AMPS			POLES			LOAD			BUS AMPS		
A	B	C																									A	B	C
8			EXISTING INTERIOR LIGHTING	1	20	1					2	20	1	EXISTING INTERIOR RECEPTACLES	3														
	5		EXISTING EXTERIOR LIGHTING	1	20	3					4	20	1	EXISTING EXTERIOR RECEPTACLES															
			EXISTING SPARE	1	20	5					6	20	1	EXISTING TANK LIGHTING													5		
3			EXISTING LIGHTING CONTACTOR	1	20	7					8	20	1	EXISTING SPARE															
			EXISTING SPARE	1	20	9					10	20	1	EXISTING MOTOR SPACE HEATER													8		
	8		EXISTING PLC CONTROL PANEL	1	20	11					12	20	1	EXISTING SPARE															
			EXISTING SPARE	1	20	13					14	20	1	EXISTING SPARE															
			EXISTING SPARE	1	20	15					16	20	1	EXISTING SPARE															
			EXISTING SPARE	1	20	17					18	20	1	EXISTING SPARE															
			EXISTING SPARE	1	20	19					20	20	1	EXISTING SPARE															
			EXISTING SPARE	2	30	21					22	20	1	EXISTING SPARE															
			EXISTING SPARE			23					24	20	1	EXISTING SPARE															
14						25					26			EXISTING SPARE															
	16		MAIN BREAKER	3	50	27					28			EXISTING SPARE															
		13				29					30			EXISTING SPARE															

LOCATION: ELECTRICAL ROOM										PANELBOARD SCHEDULE										REVISED PANEL PNLX5601									
BUS AMPS			LOAD			POLES		AMPS		CIRC.		BUS A B C			CIRC.			AMPS			POLES			LOAD			BUS AMPS		
A	B	C																									A	B	C
8			EXISTING INTERIOR LIGHTING	1	20	1					2	20	1	EXISTING INTERIOR RECEPTACLES	3														
	5		EXISTING EXTERIOR LIGHTING	1	20	3					4	20	1	EXISTING EXTERIOR RECEPTACLES															
			EXISTING SPARE	1	20	5					6	20	1	EXISTING TANK LIGHTING													5		
3			EXISTING LIGHTING CONTACTOR	1	20	7					8	20	1	EXISTING SPARE															
			EXISTING SPARE	1	20	9					10	20	1	EXISTING MOTOR SPACE HEATER													8		
	8		EXISTING PLC CONTROL PANEL	1	20	11					12	20	1	CAMERAS													3		
			EXISTING SPARE	1	20	13					14	20	1	CONTROL PANEL															
			EXISTING SPARE	1	20	15					16	20	1	EXISTING SPARE															
			EXISTING SPARE	1	20	17					18	20	1	EXISTING SPARE															
			EXISTING SPARE	1	20	19					20	20	2*	UPPER LEVEL LIGHTING													13		
			EXISTING SPARE	2	30	21					22																13		
						23					24	20	2*	UPPER LEVEL LIGHTING													13		
						25					26																		
40			MAIN BREAKER	3	50	27					28	20	2*	LOWER & MID LEVEL LIGHTING													11		
		40				29					30																11		

- GENERAL ELECTRICAL NOTES:**
- ALL ELECTRICAL WORK SHALL COMPLY WITH THE CURRENT APPLICABLE EDITION OF THE NATIONAL ELECTRICAL CODE (NEC), THE NATIONAL FIRE CODES (NFPA), THE AMERICANS WITH DISABILITIES ACT (ADA), THE FLORIDA BUILDING CODE (FBC), THE FLORIDA STATE REQUIREMENTS FOR EDUCATIONAL FACILITIES (SREF) AND ALL OTHER LOCAL CODES AND AMENDMENTS.
  - THE CONTRACTOR SHALL THOROUGHLY REVIEW THE PROJECT TO ENSURE THAT ALL WORK SHALL MEET OR EXCEED THE ABOVE REQUIREMENTS. ANY ALLEGED DISCREPANCIES SHALL BE BROUGHT TO THE ENGINEER'S ATTENTION PRIOR TO BID.
  - THE CONTRACTOR IS DIRECTED TO OBTAIN COPIES OF ALL RELATED PLANS, SPECIFICATIONS, SHOP DRAWINGS AND ADDENDUM TO COORDINATE THE RELATED WORK AND SCHEDULING.
  - THE CONTRACTOR IS REMINDED THAT ELECTRICAL SERVICE TO AND FOR ALL EQUIPMENT SHOWN IS BASED ON EQUIPMENT DESIGN DATA. THE VALUES MAY DIFFER DEPENDING UPON THE ACTUAL EQUIPMENT TO BE FURNISHED. ANY MODIFICATION TO THE ELECTRICAL, BASED UPON ACTUAL EQUIPMENT SELECTION, SHALL RESULT IN NO ADDITIONAL COST TO THE OWNER.
  - THE CONTRACTOR SHALL OBTAIN A COMPLETE SET OF DRAWINGS FOR ALL DISCIPLINES FOR THIS PROJECT AND SHALL THOROUGHLY REVIEW ALL DRAWINGS OF ALL TRADES TO ASSURE THAT ELECTRICAL SERVICE FOR ALL ITEMS AND/OR EQUIPMENT REQUIRING ELECTRICAL SERVICE IS INCLUDED. ANY ITEM AND/OR EQUIPMENT NOT PROVIDED WITH ELECTRICAL SERVICE, SHALL BE BROUGHT TO THE ENGINEER'S ATTENTION PRIOR TO BID.
  - ALL PANELBOARDS SHALL BE PROVIDED WITH A TYPED SCHEDULE SHOWING CIRCUIT NUMBERS AND A COMPLETE DESCRIPTION OF EACH CIRCUIT.
  - MINIMUM TRADE SIZE CONDUIT PERMITTED SHALL BE 3/4 INCH UNLESS NOTED OTHERWISE.
  - ALL CONDUCTOR METAL SHALL BE COPPER WITH 600 VOLT INSULATION TYPE THHN (MINIMUM SIZE SHALL BE #12AWG). CONTRACTOR SHALL ADJUST WIRE AND CONDUIT SIZES IF OTHER INSULATION TYPES ARE USED.
  - ALL SPECIAL PURPOSE OUTLETS SHALL BE PROVIDED TO MATCH EQUIPMENT TO BE SUPPLIED.
  - ALL PANELBOARDS, SWITCHES AND CIRCUIT BREAKERS SHALL BE ITE, SQUARE D, GE, OR CUTLER HAMMER.
  - ALL CONDUITS SHALL HAVE A SEPARATE GREEN GROUND CONDUCTOR INSTALLED FOR GROUNDING.
  - ANY EXISTING UTILITIES LOCATED IN THE AREA OF CONSTRUCTION WHICH REQUIRE RELOCATION BY THE OWNER SHALL BE COORDINATED WITH THE OWNER'S REPRESENTATIVE A MINIMUM OF TEN DAYS IN ADVANCE.
  - ALL DISCONNECT SWITCHES SHALL BE THE HEAVY DUTY TYPE WITH BUSSMAN TIME DELAY, DUAL ELEMENT AND CURRENT LIMITING FUSES.
  - ALL EMPTY CONDUITS SHALL CONTAIN JET LINE #232 POLYOFIN 200 LB. TEST.
  - ALL WORK SHOWN ON THE ELECTRICAL PLANS SHALL BE PERFORMED BY THE CONTRACTOR UNLESS NOTED OTHERWISE.
  - ALL ELECTRICAL EQUIPMENT INSTALLED OUTDOORS SHALL HAVE NEMA 4X STAINLESS STEEL WEATHER PROOF ENCLOSURES.
  - ALL UNDERGROUND CONDUITS SHALL BE SCHEDULE 80 PVC. ALL EXPOSED CONDUITS SHALL BE PVC COATED RIGID STEEL.
  - ALL HARDWARE SHALL BE STAINLESS STEEL.

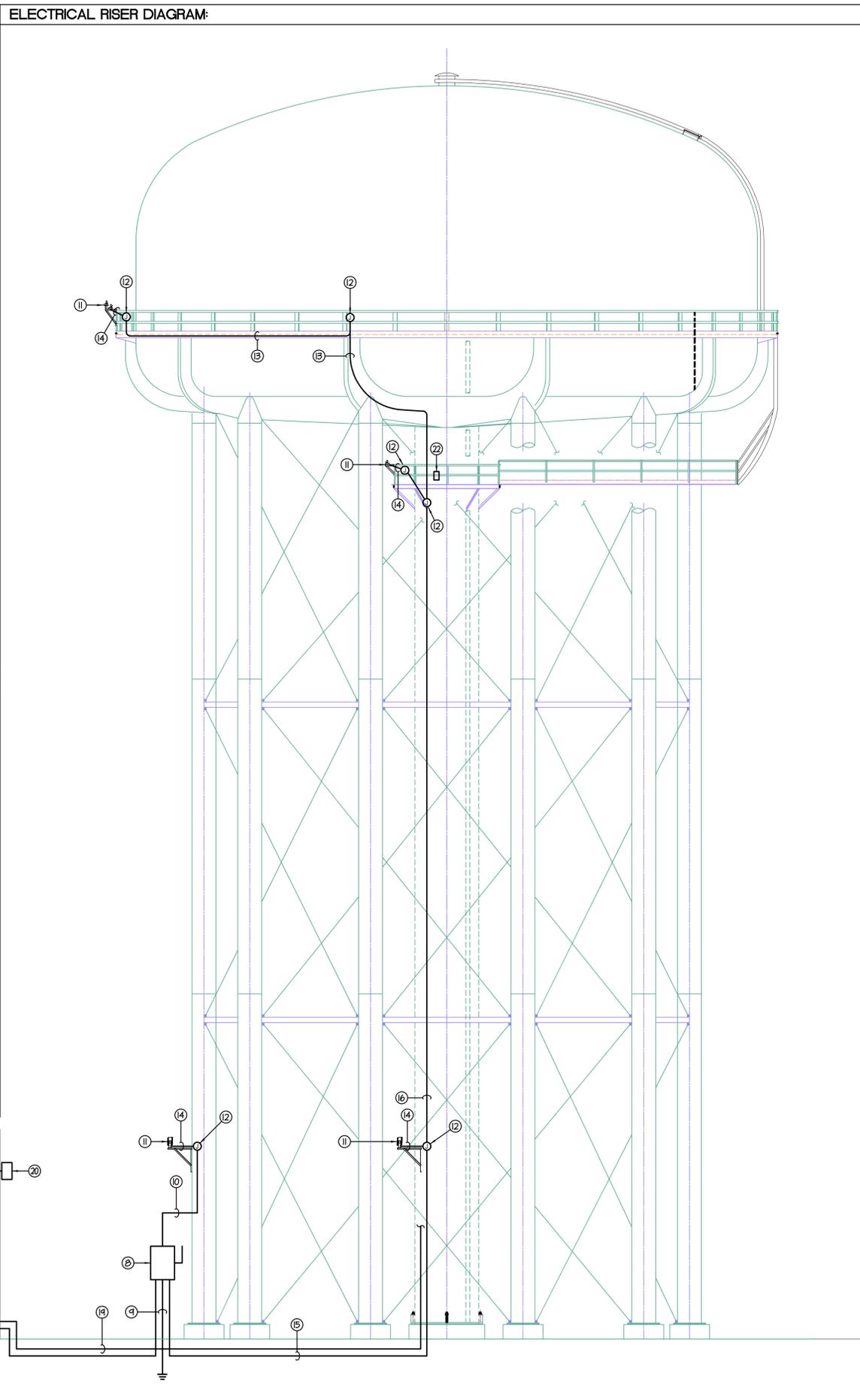
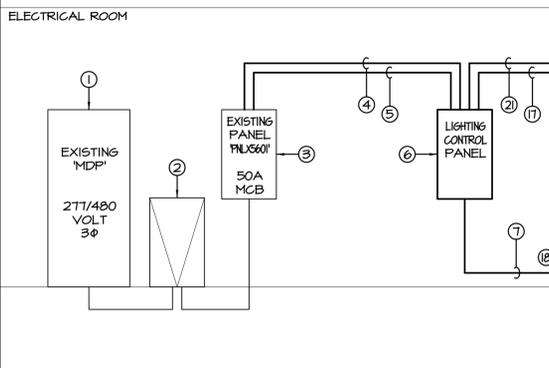
**ELECTRICAL ABBREVIATIONS AND SYMBOL LEGEND:**

- A.F.F. ABOVE FINISHED FLOOR
- A.F.G. ABOVE FINISHED GRADE
- C CONDUIT
- GFI GROUND FAULT INTERRUPT
- WP WEATHERPROOF
- CONDUIT
- ⊕ EQUIPMENT SCHEDULE NOTATION
- ⊕ LIGHTING FIXTURE
- 120/208V PANELBOARD
- ↓ GROUND CONNECTION
- DISCONNECT SWITCH
- ⊕ GROUND TYPE DUPLEX RECEPTACLE 120V-20A. #18" AFF UNLESS NOTED OTHERWISE
- ⊕ JUNCTION FULL BOX
- \$ SPST SWITCH
- ⊕ LINE VOLTAGE INCANDESCENT DIMMER (1000W UNLESS NOTED OTHERWISE)
- a.b SWITCHING SEQUENCE

**ELECTRICAL LOAD CALCULATIONS:**

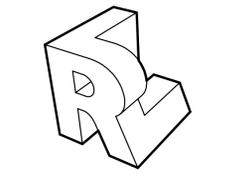
	EXISTING PANEL PNLX5601	ADDED LOADS	REVISED PANEL PNLX5601
LIGHTING	2.2 KW	8.0 KW	10.2 KW
RECEPTACLES	0.7 KW	0.0 KW	0.7 KW
MISC. EQUIPMENT	2.3 KW	1.0 KW	3.3 KW
HVAC EQUIPMENT	0.0 KW	0.0 KW	0.0 KW
<b>TOTAL KW</b>	<b>5.2 KW</b>	<b>9.0 KW</b>	<b>14.2 KW</b>
<b>TOTAL AMPS @ 120/208V 3φ</b>	<b>14 AMPS</b>	<b>25 AMPS</b>	<b>39 AMPS</b>
<b>TOTAL AMPS @ 277/480V 3φ</b>	<b>6 AMPS</b>	<b>34 AMPS</b>	<b>40 AMPS</b>
<b>RATING</b>	<b>50 AMPS</b>		<b>50 AMPS</b>

- PLAN NOTES:**
- EXISTING 277/480 VOLT DISTRIBUTION PANEL 'MDP' TO REMAIN.
  - EXISTING STEP DOWN TRANSFORMER TO REMAIN.
  - EXISTING PANEL PNLX5601 TO REMAIN. SEE PANEL SCHEDULE FOR NEW CIRCUITS ADDED TO FEED LIGHTING FIXTURES AND CONTROL PANEL.
  - 3/4" C-2#12/#126 FOR POWER TO CONTROL PANEL.
  - 1" C-6#8/#86 FOR POWER TO LIGHTING FIXTURES.
  - LIGHTING CONTROL PANEL. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
  - 1" C-6#8/#86.
  - 6 POLE NON FUSED DISCONNECT SWITCH IN NEMA 4X ENCLOSURE TO DISCONNECT ALL POWER CIRCUITS TO THE WATER TOWER STRUCTURE. MOUNT TO STRUCTURE USING STAINLESS STEEL UNISTRUT.
  - #86. GROUND PER NEC ARTICLE 250.
  - 1" C-6#8/#86.
  - LIGHTING FIXTURE. (TYPICAL) SEE LIGHTING FIXTURE SPECIFICATIONS.
  - WP JUNCTION BOX. (TYPICAL)
  - 1" C-4#8/#86.
  - 3/4" C-2#12/#126.
  - 1" C-6#8/#86.
  - 1" C-6#8/#86.
  - 3/4" C TO TELEPHONE CABINET FOR COMMUNICATIONS.
  - CORE DRILL THROUGH WALL 2'-0" ABOVE FINISHED FLOOR AND RUN CONDUITS UNDERGROUND TO WATER TOWER.
  - 3/4" C TO WIRELESS BRIDGE ON WATER TOWER FOR CONTROLS. VERIFY EXACT REQUIREMENTS PRIOR TO ROUGH-IN.
  - DMX TRANSMITTER. VERIFY EXACT LOCATION AND REQUIREMENTS PRIOR TO ROUGH-IN.
  - 3/4" C-2#12/#126 FOR POWER AND 3/4" C FOR COMMUNICATIONS. TIE TO CIRCUIT 14.
  - WIRELESS BRIDGE. VERIFY EXACT LOCATION AND REQUIREMENTS PRIOR TO ROUGH-IN.



**RONALD L. LEVINSON, P.E.**  
 530 S. Federal Hwy.  
 Suite No. 4  
 Lake Worth  
 Florida 33460-4681  
 Ph: (561)379-5835  
 Fax: (561)582-3700  
 LevinsonPE@gmail.com

FL P.E. NO. 34871



PROJECT:

# WATER TOWER LIGHTING

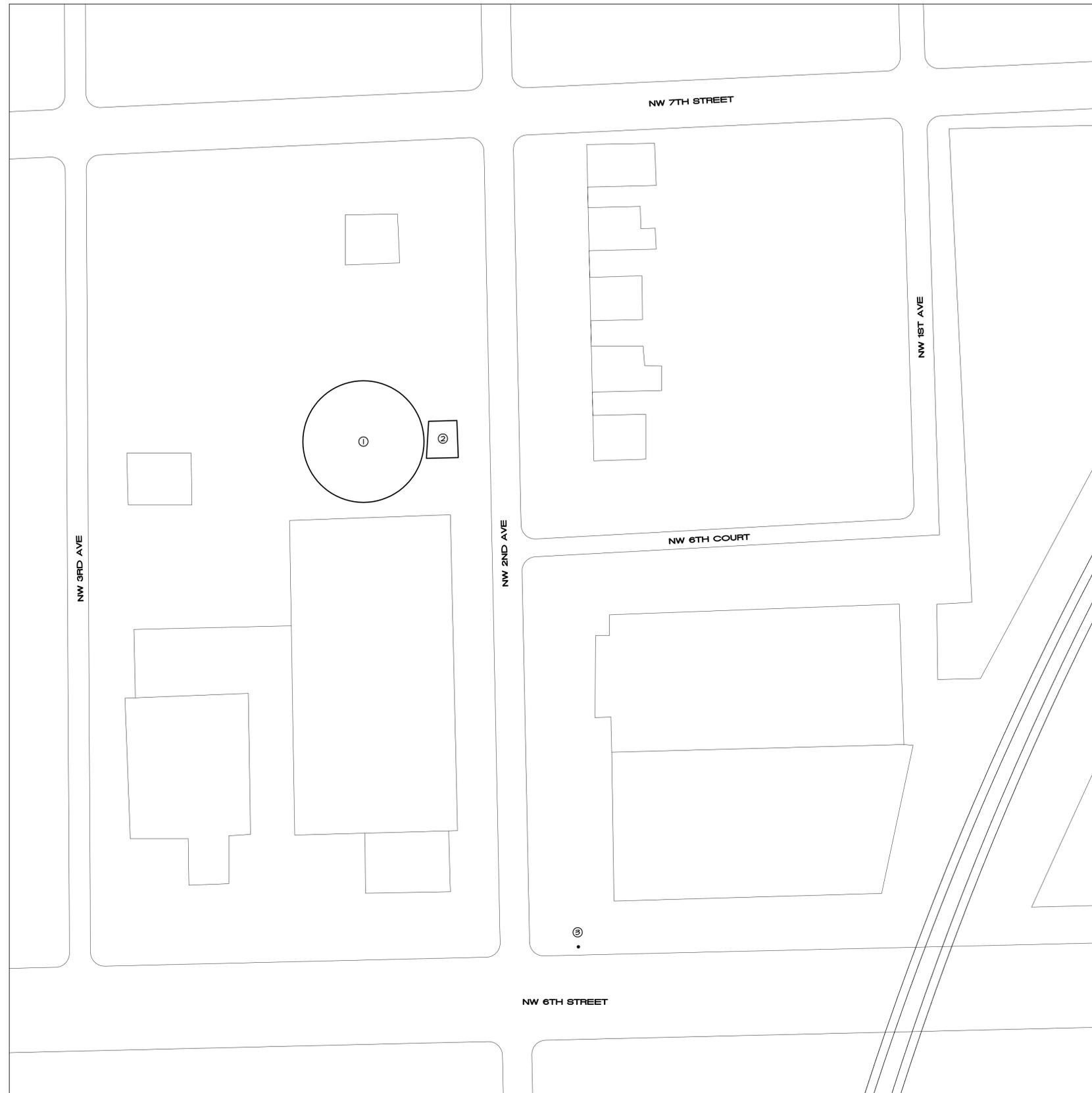
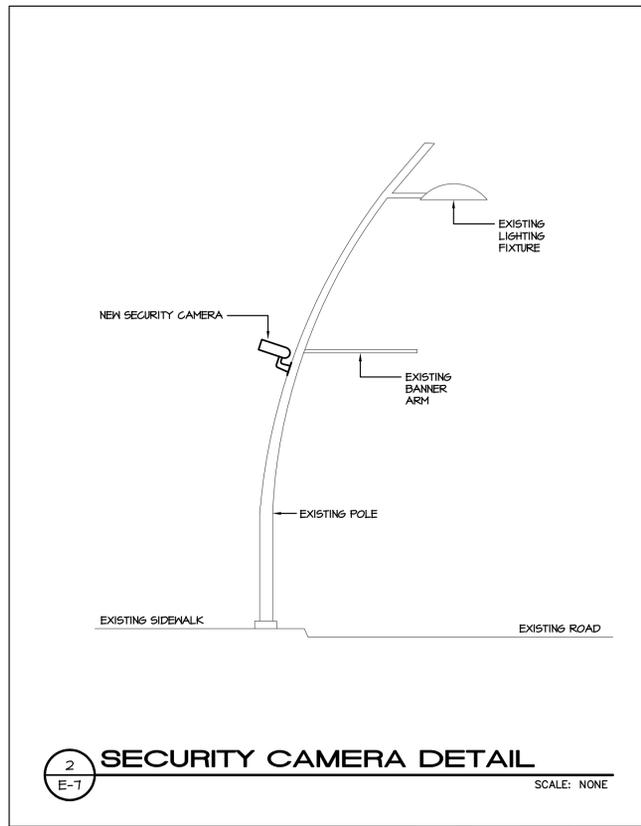
The City of Fort Lauderdale

PCN: 4942-34-07-6430  
 625 NW 2 Ave  
 Fort Lauderdale  
 Florida  
 33311

Date: 08-01-2016  
 Drawn By: RLL  
 Checked By: RLL  
 Project No: 160202  
 Revised: 11-16-2016  
 BID SET 3-3-2017

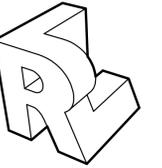
BID SET  
 SHEET NO. 7 of 8

# E-6



RONALD L. LEVINSON, P.E.  
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PROJECT:

**WATER TOWER LIGHTING**

The City of Fort Lauderdale

PCN: 4942-34-07-6430  
625 NW 2 Ave  
Fort Lauderdale  
Florida  
33311

Date: 08-01-2016  
Drawn By: RLL  
Checked By: RLL  
Project No: 160202  
Revised:  
BID SET 3-3-2017

BID SET

SHEET NO. 8 of 8

**E-7**

**PLAN NOTES:**

- ① EXISTING WATER TOWER. SEE SHEETS E-1 THROUGH E-3 FOR WATER TOWER ELECTRICAL REQUIREMENTS.
- ② EXISTING EQUIPMENT BUILDING. SEE SHEET E-4 FOR ELECTRICAL REQUIREMENTS IN THIS AREA.
- ③ EXISTING POLE MOUNTED DECORATIVE STREET LIGHT TO REMAIN. PROVIDE SECURITY CAMERA ON THIS POLE. SEE DETAIL 2/E-7 FOR ELECTRICAL REQUIREMENTS.

**1**  
E-7

**ELECTRICAL AREA PLAN**

SCALE: 1" = 20'-0"



**CITY OF FORT LAUDERDALE  
GENERAL CONDITIONS**

These instructions are standard for all contracts for commodities or services issued through the City of Fort Lauderdale Procurement Services Division. The City may delete, supersede, or modify any of these standard instructions for a particular contract by indicating such change in the Invitation to Bid (ITB) Special Conditions, Technical Specifications, Instructions, Proposal Pages, Addenda, and Legal Advertisement. In this general conditions document, Invitation to Bid (ITB), Request for Qualifications (RFQ), and Request for Proposal (RFP) are interchangeable.

**PART I BIDDER PROPOSAL PAGE(S) CONDITIONS:**

- 1.01 BIDDER ADDRESS:** The City maintains automated vendor address lists that have been generated for each specific Commodity Class item through our bid issuing service, BidSync. Notices of Invitations to Bid (ITB'S) are sent by e-mail to the selection of bidders who have fully registered with BidSync or faxed (if applicable) to every vendor on those lists, who may then view the bid documents online. Bidders who have been informed of a bid's availability in any other manner are responsible for registering with BidSync in order to view the bid documents. There is no fee for doing so. If you wish bid notifications be provided to another e-mail address or fax, please contact BidSync. If you wish purchase orders sent to a different address, please so indicate in your bid response. If you wish payments sent to a different address, please so indicate on your invoice.
- 1.02 DELIVERY:** Time will be of the essence for any orders placed as a result of this ITB. The City reserves the right to cancel any orders, or part thereof, without obligation if delivery is not made in accordance with the schedule specified by the Bidder and accepted by the City.
- 1.03 PACKING SLIPS:** It will be the responsibility of the awarded Contractor, to attach all packing slips to the OUTSIDE of each shipment. Packing slips must provide a detailed description of what is to be received and reference the City of Fort Lauderdale purchase order number that is associated with the shipment. Failure to provide a detailed packing slip attached to the outside of shipment may result in refusal of shipment at Contractor's expense.
- 1.04 PAYMENT TERMS AND CASH DISCOUNTS:** Payment terms, unless otherwise stated in this ITB, will be considered to be net 45 days after the date of satisfactory delivery at the place of acceptance and receipt of correct invoice at the office specified, whichever occurs last. Bidder may offer cash discounts for prompt payment but they will not be considered in determination of award. If a Bidder offers a discount, it is understood that the discount time will be computed from the date of satisfactory delivery, at the place of acceptance, and receipt of correct invoice, at the office specified, whichever occurs last.
- 1.05 TOTAL BID DISCOUNT:** If Bidder offers a discount for award of all items listed in the bid, such discount shall be deducted from the total of the firm net unit prices bid and shall be considered in tabulation and award of bid.
- 1.06 BIDS FIRM FOR ACCEPTANCE:** Bidder warrants, by virtue of bidding, that the bid and the prices quoted in the bid will be firm for acceptance by the City for a period of one hundred twenty (120) days from the date of bid opening unless otherwise stated in the ITB.
- 1.07 VARIANCES:** For purposes of bid evaluation, Bidder's must indicate any variances, no matter how slight, from ITB General Conditions, Special Conditions, Specifications or Addenda in the space provided in the ITB. No variations or exceptions by a Bidder will be considered or deemed a part of the bid submitted unless such variances or exceptions are listed in the bid and referenced in the space provided on the bidder proposal pages. If variances are not stated, or referenced as required, it will be assumed that the product or service fully complies with the City's terms, conditions, and specifications.
- By receiving a bid, City does not necessarily accept any variances contained in the bid. All variances submitted are subject to review and approval by the City. If any bid contains material variances that, in the City's sole opinion, make that bid conditional in nature, the City reserves the right to reject the bid or part of the bid that is declared, by the City as conditional.
- 1.08 NO BIDS:** If you do not intend to bid please indicate the reason, such as insufficient time to respond, do not offer product or service, unable to meet specifications, schedule would not permit, or any other reason, in the space provided in this ITB. Failure to bid or return no bid comments prior to the bid due and opening date and time, indicated in this ITB, may result in your firm being deleted from our Bidder's registration list for the Commodity Class Item requested in this ITB.
- 1.09 MINORITY AND WOMEN BUSINESS ENTERPRISE PARTICIPATION AND BUSINESS DEFINITIONS:** The City of Fort Lauderdale wants to increase the participation of Minority Business Enterprises (MBE), Women Business Enterprises (WBE), and Small Business Enterprises (SBE) in its procurement activities. If your firm qualifies in accordance with the below definitions please indicate in the space provided in this ITB.

Minority Business Enterprise (MBE) "A Minority Business" is a business enterprise that is owned or controlled by one or more socially or economically disadvantaged persons. Such disadvantage may arise from cultural, racial, chronic economic

CAM 18-0015  
EXHIBIT 3

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circumstances or background or other similar cause. Such persons include, but are not limited to: Blacks, Hispanics, Asian Americans, and Native Americans.

The term "Minority Business Enterprise" means a business at least 51 percent of which is owned by minority group members or, in the case of a publicly owned business, at least 51 percent of the stock of which is owned by minority group members. For the purpose of the preceding sentence, minority group members are citizens of the United States who include, but are not limited to: Blacks, Hispanics, Asian Americans, and Native Americans.

Women Business Enterprise (WBE) a "Women Owned or Controlled Business" is a business enterprise at least 51 percent of which is owned by females or, in the case of a publicly owned business, at least 51 percent of the stock of which is owned by females.

Small Business Enterprise (SBE) "Small Business" means a corporation, partnership, sole proprietorship, or other legal entity formed for the purpose of making a profit, which is independently owned and operated, has either fewer than 100 employees or less than \$1,000,000 in annual gross receipts.

BLACK, which includes persons having origins in any of the Black racial groups of Africa.

WHITE, which includes persons whose origins are Anglo-Saxon and Europeans and persons of Indo-European decent including Pakistani and East Indian.

HISPANIC, which includes persons of Mexican, Puerto Rican, Cuban, Central and South American, or other Spanish culture or origin, regardless of race.

NATIVE AMERICAN, which includes persons whose origins are American Indians, Eskimos, Aleuts, or Native Hawaiians.

ASIAN AMERICAN, which includes persons having origin in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands.

#### 1.10 **MINORITY-WOMEN BUSINESS ENTERPRISE PARTICIPATION**

It is the desire of the City of Fort Lauderdale to increase the participation of minority (MBE) and women-owned (WBE) businesses in its contracting and procurement programs. While the City does not have any preference or set aside programs in place, it is committed to a policy of equitable participation for these firms. Proposers are requested to include in their proposals a narrative describing their past accomplishments and intended actions in this area. If proposers are considering minority or women owned enterprise participation in their proposal, those firms, and their specific duties have to be identified in the proposal. If a proposer is considered for award, he or she will be asked to meet with City staff so that the intended MBE/WBE participation can be formalized and included in the subsequent contract.

#### 1.11 **SCRUTINIZED COMPANIES**

Subject to *Odebrecht Construction, Inc., v. Prasad*, 876 F.Supp.2d 1305 (S.D. Fla. 2012), *affirmed*, *Odebrecht Construction, Inc., v. Secretary, Florida Department of Transportation*, 715 F.3d 1268 (11th Cir. 2013), with regard to the "Cuba Amendment," the Contractor certifies that it is not on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List or the Scrutinized Companies that Boycott Israel List created pursuant to Section 215.4725, Florida Statutes (2016), that it is not engaged in a boycott of Israel, and that it does not have business operations in Cuba or Syria, as provided in section 287.135, Florida Statutes (2016), as may be amended or revised. The City may terminate this Agreement at the City's option if the Contractor is found to have submitted a false certification as provided under subsection (5) of section 287.135, Florida Statutes (2016), as may be amended or revised, or been placed on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List or the Scrutinized Companies that Boycott Israel List created pursuant to Section 215.4725, Florida Statutes (2016), or is engaged in a boycott of Israel or has been engaged in business operations in Cuba or Syria, as defined in Section 287.135, Florida Statutes (2016), as may be amended or revised.

#### 1.12 **DEBARRED OR SUSPENDED BIDDERS OR PROPOSERS**

The bidder or proposer certifies, by submission of a response to this solicitation, that neither it nor its principals and subcontractors are presently debarred or suspended by any Federal department or agency.

#### **Part II DEFINITIONS/ORDER OF PRECEDENCE:**

- 2.01 BIDDING DEFINITIONS** The City will use the following definitions in its general conditions, special conditions, technical specifications, instructions to bidders, addenda and any other document used in the bidding process:  
INVITATION TO BID (ITB) when the City is requesting bids from qualified Bidders.

REQUEST FOR PROPOSALS (RFP) when the City is requesting proposals from qualified Proposers.

REQUEST FOR QUALIFICATIONS (RFQ) when the City is requesting qualifications from qualified Proposers.

BID – a price and terms quote received in response to an ITB.

PROPOSAL – a proposal received in response to an RFP.

BIDDER – Person or firm submitting a Bid.

PROPOSER – Person or firm submitting a Proposal.

RESPONSIVE BIDDER – A person whose bid conforms in all material respects to the terms and conditions included in the ITB.

RESPONSIBLE BIDDER – A person who has the capability in all respects to perform in full the contract requirements, as stated in the ITB, and the integrity and reliability that will assure good faith performance.

FIRST RANKED PROPOSER – That Proposer, responding to a City RFP, whose Proposal is deemed by the City, the most advantageous to the City after applying the evaluation criteria contained in the RFP.

SELLER – Successful Bidder or Proposer who is awarded a Purchase Order or Contract to provide goods or services to the City.

CONTRACTOR – Successful Bidder or Proposer who is awarded a Purchase Order, award Contract, Blanket Purchase Order agreement, or Term Contract to provide goods or services to the City.

CONTRACT – A deliberate verbal or written agreement between two or more competent parties to perform or not to perform a certain act or acts, including all types of agreements, regardless of what they may be called, for the procurement or disposal of equipment, materials, supplies, services or construction.

CONSULTANT – Successful Bidder or Proposer who is awarded a contract to provide professional services to the City.

The following terms may be used interchangeably by the City: ITB and/or RFP; Bid or Proposal; Bidder, Proposer, or Seller; Contractor or Consultant; Contract, Award, Agreement or Purchase Order.

- 2.02 SPECIAL CONDITIONS:** Any and all Special Conditions contained in this ITB that may be in variance or conflict with these General Conditions shall have precedence over these General Conditions. If no changes or deletions to General Conditions are made in the Special Conditions, then the General Conditions shall prevail in their entirety,

### **PART III BIDDING AND AWARD PROCEDURES:**

- 3.01 SUBMISSION AND RECEIPT OF BIDS:** To receive consideration, bids must be received prior to the bid opening date and time. Unless otherwise specified, Bidders should use the proposal forms provided by the City. These forms may be duplicated, but failure to use the forms may cause the bid to be rejected. Any erasures or corrections on the bid must be made in ink and initialed by Bidder in ink. All information submitted by the Bidder shall be printed, typewritten or filled in with pen and ink. Bids shall be signed in ink. Separate bids must be submitted for each ITB issued by the City in separate sealed envelopes properly marked. When a particular ITB or RFP requires multiple copies of bids or proposals they may be included in a single envelope or package properly sealed and identified. Only send bids via facsimile transmission (FAX) if the ITB specifically states that bids sent via FAX will be considered. If such a statement is not included in the ITB, bids sent via FAX will be rejected. Bids will be publicly opened in the Procurement Office, or other designated area, in the presence of Bidders, the public, and City staff. Bidders and the public are invited and encouraged to attend bid openings. Bids will be tabulated and made available for review by Bidder's and the public in accordance with applicable regulations.
- 3.02 MODEL NUMBER CORRECTIONS:** If the model number for the make specified in this ITB is incorrect, or no longer available and replaced with an updated model with new specifications, the Bidder shall enter the correct model number on the bidder proposal page. In the case of an updated model with new specifications, Bidder shall provide adequate information to allow the City to determine if the model bid meets the City's requirements.
- 3.03 PRICES QUOTED:** Deduct trade discounts, and quote firm net prices. Give both unit price and extended total. In the case of a discrepancy in computing the amount of the bid, the unit price quoted will govern. All prices quoted shall be F.O.B. destination, freight prepaid (Bidder pays and bears freight charges, Bidder owns goods in transit and files any claims), unless otherwise stated in Special Conditions. Each item must be bid separately. No attempt shall be made to tie any item or items contained in the ITB with any other business with the City.
- 3.04 TAXES:** The City of Fort Lauderdale is exempt from Federal Excise and Florida Sales taxes on direct purchase of tangible property. Exemption **number for EIN is 59-6000319, and State Sales tax exemption number is 85-8013875578C-1.**
- 3.05 WARRANTIES OF USAGE:** Any quantities listed in this ITB as estimated or projected are provided for tabulation and information purposes only. No warranty or guarantee of quantities is given or implied. It is understood that the Contractor will furnish the City's needs as they arise.
- 3.06 APPROVED EQUAL:** When the technical specifications call for a brand name, manufacturer, make, model, or vendor catalog number with acceptance of APPROVED EQUAL, it shall be for the purpose of establishing a level of quality and features desired and acceptable to the City. In such cases, the City will be receptive to any unit that would be considered by qualified City personnel as an approved equal. In that the specified make and model represent a level of quality and features desired by the City, the Bidder must state clearly in the bid any variance from those specifications. It is the Bidder's responsibility to provide adequate information, in the bid, to enable the City to ensure that the bid meets the required criteria. If adequate information is not submitted with the bid, it may be rejected. The City will be the sole judge in determining if the item bid qualifies as an approved equal.

- 3.07 MINIMUM AND MANDATORY TECHNICAL SPECIFICATIONS:** The technical specifications may include items that are considered minimum, mandatory, or required. If any Bidder is unable to meet or exceed these items, and feels that the technical specifications are overly restrictive, the bidder must notify the Procurement Services Division immediately. Such notification must be received by the Procurement Services Division prior to the deadline contained in the ITB, for questions of a material nature, or prior to five (5) days before bid due and open date, whichever occurs first. If no such notification is received prior to that deadline, the City will consider the technical specifications to be acceptable to all bidders.
- 3.08 MISTAKES:** Bidders are cautioned to examine all terms, conditions, specifications, drawings, exhibits, addenda, delivery instructions and special conditions pertaining to the ITB. Failure of the Bidder to examine all pertinent documents shall not entitle the bidder to any relief from the conditions imposed in the contract.
- 3.09 SAMPLES AND DEMONSTRATIONS:** Samples or inspection of product may be requested to determine suitability. Unless otherwise specified in Special Conditions, samples shall be requested after the date of bid opening, and if requested should be received by the City within seven (7) working days of request. Samples, when requested, must be furnished free of expense to the City and if not used in testing or destroyed, will upon request of the Bidder, be returned within thirty (30) days of bid award at Bidder's expense. When required, the City may request full demonstrations of units prior to award. When such demonstrations are requested, the Bidder shall respond promptly and arrange a demonstration at a convenient location. Failure to provide samples or demonstrations as specified by the City may result in rejection of a bid.
- 3.10 LIFE CYCLE COSTING:** If so specified in the ITB, the City may elect to evaluate equipment proposed on the basis of total cost of ownership. In using Life Cycle Costing, factors such as the following may be considered: estimated useful life, maintenance costs, cost of supplies, labor intensity, energy usage, environmental impact, and residual value. The City reserves the right to use those or other applicable criteria, in its sole opinion that will most accurately estimate total cost of use and ownership.
- 3.11 BIDDING ITEMS WITH RECYCLED CONTENT:** In addressing environmental concerns, the City of Fort Lauderdale encourages Bidders to submit bids or alternate bids containing items with recycled content. When submitting bids containing items with recycled content, Bidder shall provide documentation adequate for the City to verify the recycled content. The City prefers packaging consisting of materials that are degradable or able to be recycled. When specifically stated in the ITB, the City may give preference to bids containing items manufactured with recycled material or packaging that is able to be recycled.
- 3.12 USE OF OTHER GOVERNMENTAL CONTRACTS:** The City reserves the right to reject any part or all of any bids received and utilize other available governmental contracts, if such action is in its best interest.
- 3.13 QUALIFICATIONS/INSPECTION:** Bids will only be considered from firms normally engaged in providing the types of commodities/services specified herein. The City reserves the right to inspect the Bidder's facilities, equipment, personnel, and organization at any time, or to take any other action necessary to determine Bidder's ability to perform. The Procurement Director reserves the right to reject bids where evidence or evaluation is determined to indicate inability to perform.
- 3.14 BID SURETY:** If Special Conditions require a bid security, it shall be submitted in the amount stated. A bid security can be in the form of a bid bond or cashier's check. Bid security will be returned to the unsuccessful bidders as soon as practicable after opening of bids. Bid security will be returned to the successful bidder after acceptance of the performance bond, if required; acceptance of insurance coverage, if required; and full execution of contract documents, if required; or conditions as stated in Special Conditions.
- 3.15 PUBLIC RECORDS/TRADE SECRETS/COPYRIGHT:** The Proposer's response to the RFP is a public record pursuant to Florida law, which is subject to disclosure by the City under the State of Florida Public Records Law, Florida Statutes Chapter 119.07 ("Public Records Law"). The City shall permit public access to all documents, papers, letters or other material submitted in connection with this RFP and the Contract to be executed for this RFP, subject to the provisions of Chapter 119.07 of the Florida Statutes.

Any language contained in the Proposer's response to the RFP purporting to require confidentiality of any portion of the Proposer's response to the RFP, except to the extent that certain information is in the City's opinion a Trade Secret pursuant to Florida law, shall be void. If a Proposer submits any documents or other information to the City which the Proposer claims is Trade Secret information and exempt from Florida Statutes Chapter 119.07 ("Public Records Laws"), the Proposer shall clearly designate that it is a Trade Secret and that it is asserting that the document or information is exempt. The Proposer must specifically identify the exemption being claimed under Florida Statutes 119.07. The City shall be the final arbiter of whether any information contained in the Proposer's response to the RFP constitutes a Trade Secret. The city's determination of whether an exemption applies shall be final, and the proposer agrees to defend, indemnify, and hold harmless the city and the city's officers, employees, and agent, against any loss or damages incurred by any person or entity as a result of the city's treatment of records as public records. Proposals purporting to be subject to copyright protection in full or in part will be rejected.

EXCEPT FOR CLEARLY MARKED PORTIONS THAT ARE BONA FIDE TRADE SECRETS PURSUANT TO FLORIDA LAW, DO NOT MARK YOUR RESPONSE TO THE RFP AS PROPRIETARY OR CONFIDENTIAL. DO NOT MARK YOUR RESPONSE TO THE RFP OR ANY PART THEREOF AS COPYRIGHTED.

- 3.16 PROHIBITION OF INTEREST:** No contract will be awarded to a bidding firm who has City elected officials, officers, or

employees affiliated with it, unless the bidding firm has fully complied with current Florida State Statutes and City Ordinances relating to this issue. Bidders must disclose any such affiliation. Failure to disclose any such affiliation will result in disqualification of the Bidder and removal of the Bidder from the City's bidder lists and prohibition from engaging in any business with the City.

- 3.17 RESERVATIONS FOR AWARD AND REJECTION OF BIDS:** The City reserves the right to accept or reject any or all bids, part of bids, and to waive minor irregularities or variations to specifications contained in bids, and minor irregularities in the bidding process. The City also reserves the right to award the contract on a split order basis, lump sum basis, individual item basis, or such combination as shall best serve the interest of the City. The City reserves the right to make an award to the responsive and responsible bidder whose product or service meets the terms, conditions, and specifications of the ITB and whose bid is considered to best serve the City's interest. In determining the responsiveness of the offer and the responsibility of the Bidder, the following shall be considered when applicable: the ability, capacity and skill of the Bidder to perform as required; whether the Bidder can perform promptly, or within the time specified, without delay or interference; the character, integrity, reputation, judgment, experience and efficiency of the Bidder; the quality of past performance by the Bidder; the previous and existing compliance by the Bidder with related laws and ordinances; the sufficiency of the Bidder's financial resources; the availability, quality and adaptability of the Bidder's supplies or services to the required use; the ability of the Bidder to provide future maintenance, service or parts; the number and scope of conditions attached to the bid.

If the ITB provides for a contract trial period, the City reserves the right, in the event the selected bidder does not perform satisfactorily, to award a trial period to the next ranked bidder or to award a contract to the next ranked bidder, if that bidder has successfully provided services to the City in the past. This procedure to continue until a bidder is selected or the contract is re-bid, at the sole option of the City.

- 3.18 LEGAL REQUIREMENTS:** Applicable provisions of all federal, state, county laws, and local ordinances, rules and regulations, shall govern development, submittal and evaluation of all bids received in response hereto and shall govern any and all claims and disputes which may arise between person(s) submitting a bid response hereto and the City by and through its officers, employees and authorized representatives, or any other person, natural or otherwise; and lack of knowledge by any bidder shall not constitute a cognizable defense against the legal effect thereof.

- 3.19 BID PROTEST PROCEDURE: ANY PROPOSER OR BIDDER WHO IS NOT RECOMMENDED FOR AWARD OF A CONTRACT AND WHO ALLEGES A FAILURE BY THE CITY TO FOLLOW THE CITY'S PROCUREMENT ORDINANCE OR ANY APPLICABLE LAW MAY PROTEST TO THE DIRECTOR OF PROCUREMENT SERVICES DIVISION (DIRECTOR), BY DELIVERING A LETTER OF PROTEST TO THE DIRECTOR WITHIN FIVE (5) DAYS AFTER A NOTICE OF INTENT TO AWARD IS POSTED ON THE CITY'S WEB SITE AT THE FOLLOWING LINK:**  
[http://www.fortlauderdale.gov/purchasing/notices\\_of\\_intent.htm](http://www.fortlauderdale.gov/purchasing/notices_of_intent.htm)

**THE COMPLETE PROTEST ORDINANCE MAY BE FOUND ON THE CITY'S WEB SITE AT THE FOLLOWING LINK:**  
<http://www.fortlauderdale.gov/purchasing/protestordinance.pdf>

#### **PART IV BONDS AND INSURANCE**

- 4.01 PERFORMANCE BOND:** If a performance bond is required in Special Conditions, the Contractor shall within fifteen (15) working days after notification of award, furnish to the City a Performance Bond, payable to the City of Fort Lauderdale, Florida, in the face amount specified in Special Conditions as surety for faithful performance under the terms and conditions of the contract. If the bond is on an annual coverage basis, renewal for each succeeding year shall be submitted to the City thirty (30) days prior to the termination date of the existing Performance Bond. The Performance Bond must be executed by a surety company of recognized standing, authorized to do business in the State of Florida and having a resident agent.

Acknowledgement and agreement is given by both parties that the amount herein set for the Performance Bond is not intended to be nor shall be deemed to be in the nature of liquidated damages nor is it intended to limit the liability of the Contractor to the City in the event of a material breach of this Agreement by the Contractor.

- 4.02 INSURANCE:** If the Contractor is required to go on to City property to perform work or services as a result of ITB award, the Contractor shall assume full responsibility and expense to obtain all necessary insurance as required by City or specified in Special Conditions.

The Contractor shall provide to the Procurement Services Division original certificates of coverage and receive notification of approval of those certificates by the City's Risk Manager prior to engaging in any activities under this contract. The Contractor's insurance is subject to the approval of the City's Risk Manager. The certificates must list the City as an ADDITIONAL INSURED for General Liability Insurance, and shall have no less than thirty (30) days written notice of cancellation or material change. Further modification of the insurance requirements may be made at the sole discretion of the City's Risk Manager if circumstances change or adequate protection of the City is not presented. Bidder, by submitting the bid, agrees to abide by such modifications.

#### **PART V PURCHASE ORDER AND CONTRACT TERMS:**

- 5.01 COMPLIANCE TO SPECIFICATIONS, LATE DELIVERIES/PENALTIES:** Items offered may be tested for compliance to bid

specifications. Items delivered which do not conform to bid specifications may be rejected and returned at Contractor's expense. Any violation resulting in contract termination for cause or delivery of items not conforming to specifications, or late delivery may also result in:

- Bidders name being removed from the City's bidder's mailing list for a specified period and Bidder will not be recommended for any award during that period.
- All City Departments being advised to refrain from doing business with the Bidder.
- All other remedies in law or equity.

**5.02 ACCEPTANCE, CONDITION, AND PACKAGING:** The material delivered in response to ITB award shall remain the property of the Seller until a physical inspection is made and the material accepted to the satisfaction of the City. The material must comply fully with the terms of the ITB, be of the required quality, new, and the latest model. All containers shall be suitable for storage and shipment by common carrier, and all prices shall include standard commercial packaging. The City will not accept substitutes of any kind. Any substitutes or material not meeting specifications will be returned at the Bidder's expense. Payment will be made only after City receipt and acceptance of materials or services.

**5.03 SAFETY STANDARDS:** All manufactured items and fabricated assemblies shall comply with applicable requirements of the Occupation Safety and Health Act of 1970 as amended, and be in compliance with Chapter 442, Florida Statutes. Any toxic substance listed in Section 38F-41.03 of the Florida Administrative Code delivered as a result of this order must be accompanied by a completed Safety Data Sheet (SDS).

**5.04 ASBESTOS STATEMENT:** All material supplied must be 100% asbestos free. Bidder, by virtue of bidding, certifies that if awarded any portion of the ITB the bidder will supply only material or equipment that is 100% asbestos free.

**5.05 OTHER GOVERNMENTAL ENTITIES:** If the Bidder is awarded a contract as a result of this ITB, the bidder may, if the bidder has sufficient capacity or quantities available, provide to other governmental agencies, so requesting, the products or services awarded in accordance with the terms and conditions of the ITB and resulting contract. Prices shall be F.O.B. delivered to the requesting agency.

**5.06 VERBAL INSTRUCTIONS PROCEDURE:** No negotiations, decisions, or actions shall be initiated or executed by the Contractor as a result of any discussions with any City employee. Only those communications which are in writing from an authorized City representative may be considered. Only written communications from Contractors, which are assigned by a person designated as authorized to bind the Contractor, will be recognized by the City as duly authorized expressions on behalf of Contractors.

**5.07 INDEPENDENT CONTRACTOR:** The Contractor is an independent contractor under this Agreement. Personal services provided by the Proposer shall be by employees of the Contractor and subject to supervision by the Contractor, and not as officers, employees, or agents of the City. Personnel policies, tax responsibilities, social security, health insurance, employee benefits, procurement policies unless otherwise stated in this ITB, and other similar administrative procedures applicable to services rendered under this contract shall be those of the Contractor.

**5.08 INDEMNITY/HOLD HARMLESS AGREEMENT:** The Contractor agrees to protect, defend, indemnify, and hold harmless the City of Fort Lauderdale and its officers, employees and agents from and against any and all losses, penalties, damages, settlements, claims, costs, charges for other expenses, or liabilities of every and any kind including attorney's fees, in connection with or arising directly or indirectly out of the work agreed to or performed by Contractor under the terms of any agreement that may arise due to the bidding process. Without limiting the foregoing, any and all such claims, suits, or other actions relating to personal injury, death, damage to property, defects in materials or workmanship, actual or alleged violations of any applicable Statute, ordinance, administrative order, rule or regulation, or decree of any court shall be included in the indemnity hereunder.

**5.09 TERMINATION FOR CAUSE:** If, through any cause, the Contractor shall fail to fulfill in a timely and proper manner its obligations under this Agreement, or if the Contractor shall violate any of the provisions of this Agreement, the City may upon written notice to the Contractor terminate the right of the Contractor to proceed under this Agreement, or with such part or parts of the Agreement as to which there has been default, and may hold the Contractor liable for any damages caused to the City by reason of such default and termination. In the event of such termination, any completed services performed by the Contractor under this Agreement shall, at the option of the City, become the City's property and the Contractor shall be entitled to receive equitable compensation for any work completed to the satisfaction of the City. The Contractor, however, shall not be relieved of liability to the City for damages sustained by the City by reason of any breach of the Agreement by the Contractor, and the City may withhold any payments to the Contractor for the purpose of setoff until such time as the amount of damages due to the City from the Contractor can be determined.

**5.10 TERMINATION FOR CONVENIENCE:** The City reserves the right, in its best interest as determined by the City, to cancel contract by giving written notice to the Contractor thirty (30) days prior to the effective date of such cancellation.

**5.11 CANCELLATION FOR UNAPPROPRIATED FUNDS:** The obligation of the City for payment to a Contractor is limited to the availability of funds appropriated in a current fiscal period, and continuation of the contract into a subsequent fiscal period is subject to appropriation of funds, unless otherwise authorized by law.

**5.12 RECORDS/AUDIT:** The Contractor shall maintain during the term of the contract all books of account, reports and records in

accordance with generally accepted accounting practices and standards for records directly related to this contract. The Contractor agrees to make available to the City Auditor or designee, during normal business hours and in Broward, Miami-Dade or Palm Beach Counties, all books of account, reports and records relating to this contract should be retained for the duration of the contract and for three years after the final payment under this Agreement, or until all pending audits, investigations or litigation matters relating to the contract are closed, whichever is later.

- 5.13 PERMITS, TAXES, LICENSES:** The successful Contractor shall, at their own expense, obtain all necessary permits, pay all licenses, fees and taxes, required to comply with all local ordinances, state and federal laws, rules and regulations applicable to business to be carried out under this contract.
- 5.14 LAWS/ORDINANCES:** The Contractor shall observe and comply with all Federal, state, local and municipal laws, ordinances rules and regulations that would apply to this contract.
- 5.15 NON-DISCRIMINATION:** There shall be no discrimination as to race, sex, color, creed, age or national origin in the operations conducted under this contract.
- 5.16 UNUSUAL CIRCUMSTANCES:** If during a contract term where costs to the City are to remain firm or adjustments are restricted by a percentage or CPI cap, unusual circumstances that could not have been foreseen by either party of the contract occur, and those circumstances significantly affect the Contractor's cost in providing the required prior items or services, then the Contractor may request adjustments to the costs to the City to reflect the changed circumstances. The circumstances must be beyond the control of the Contractor, and the requested adjustments must be fully documented. The City may, after examination, refuse to accept the adjusted costs if they are not properly documented, increases are considered to be excessive, or decreases are considered to be insufficient. In the event the City does not wish to accept the adjusted costs and the matter cannot be resolved to the satisfaction of the City, the City will reserve the following options:
1. The contract can be canceled by the City upon giving thirty (30) days written notice to the Contractor with no penalty to the City or Contractor. The Contractor shall fill all City requirements submitted to the Contractor until the termination date contained in the notice.
  2. The City requires the Contractor to continue to provide the items and services at the firm fixed (non-adjusted) cost until the termination of the contract term then in effect.
  3. If the City, in its interest and in its sole opinion, determines that the Contractor in a capricious manner attempted to use this section of the contract to relieve them of a legitimate obligation under the contract, and no unusual circumstances had occurred, the City reserves the right to take any and all action under law or equity. Such action shall include, but not be limited to, declaring the Contractor in default and disqualifying him for receiving any business from the City for a stated period of time.
- If the City does agree to adjusted costs, these adjusted costs shall not be invoiced to the City until the Contractor receives notice in writing signed by a person authorized to bind the City in such matters.
- 5.17 ELIGIBILITY:** If applicable, the Contractor must first register with the Department of State of the State of Florida, in accordance with Florida State Statutes, prior to entering into a contract with the City.
- 5.18 PATENTS AND ROYALTIES:** The Contractor, without exception, shall indemnify and save harmless the City and its employees from liability of any nature and kind, including cost and expenses for or on account of any copyrighted, patented or un-patented invention, process, or article manufactured or used in the performance of the contract, including its use by the City. If the Contractor uses any design, device, or materials covered by letters, patent or copyright, it is mutually agreed and understood without exception that the bid prices shall include all royalties or costs arising from the use of such design, device, or materials in any way involved in the work.
- 5.19 ASSIGNMENT:** Contractor shall not transfer or assign the performance required by this ITB without the prior written consent of the City. Any award issued pursuant to this ITB, and the monies, which may become due hereunder, are not assignable except with the prior written approval of the City Commission or the City Manager or City Manager's designee, depending on original award approval.
- 5.20 LITIGATION VENUE:** The parties waive the privilege of venue and agree that all litigation between them in the state courts shall take place in Broward County, Florida and that all litigation between them in the federal courts shall take place in the Southern District in and for the State of Florida.
- 5.21 LOCATION OF UNDERGROUND FACILITIES:** If the Contractor, for the purpose of responding to this solicitation, requests the location of underground facilities through the Sunshine State One-Call of Florida, Inc. notification system or through any person or entity providing a facility locating service, and underground facilities are marked with paint, stakes or other markings within the City pursuant to such a request, then the Contractor, shall be deemed non-responsive to this solicitation in accordance with Section 2-184(5) of the City of Fort Lauderdale Code of Ordinances.

**5.22 PUBLIC RECORDS**

**IF THE CONTRACTOR HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO THE CONTRACTOR'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS CONTRACT. CONTACT THE CUSTODIAN OF PUBLIC RECORDS AT: (954-828-5002, PRRCONTRACT@FORTLAUDERDALE.GOV, CITY CLERK'S OFFICE, 100 NORTH ANDREWS AVENUE, FORT LAUDERDALE, FLORIDA 33301)**

Contractor shall:

1. Keep and maintain public records that ordinarily and necessarily would be required by the City in order to perform the service.
2. Upon request from the City's custodian of public records, provide the City with a copy of the requested records or allow the records to be inspected or copied within a reasonable time at a cost that does not exceed the cost provided in Chapter 119, Florida Statutes (2016), as may be amended or revised, or as otherwise provided by law.
3. Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law for the duration of the contract term and following completion of this contract if the Contractor does not transfer the records to the City.
4. Upon completion of the Contract, transfer, at no cost, to the City all public records in possession of the Contractor or keep and maintain public records required by the City to perform the service. If the Contractor transfers all public records to the City upon completion of this Contract, the Contractor shall destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. If the Contractor keeps and maintains public records upon completion of this Contract, the Contractor shall meet all applicable requirements for retaining public records. All records stored electronically must be provided to the City, upon request from the City's custodian of public records, in a format that is compatible with the information technology systems of the City.

**NON-COLLUSION STATEMENT:**

By signing this offer, the vendor/contractor certifies that this offer is made independently and *free* from collusion. Vendor shall disclose below any City of Fort Lauderdale, FL officer or employee, or any relative of any such officer or employee who is an officer or director of, or has a material interest in, the vendor's business, who is in a position to influence this procurement.

Any City of Fort Lauderdale, FL officer or employee who has any input into the writing of specifications or requirements, solicitation of offers, decision to award, evaluation of offers, or any other activity pertinent to this procurement is presumed, for purposes hereof, to be in a position to influence this procurement.

For purposes hereof, a person has a material interest if they directly or indirectly own more than 5 percent of the total assets or capital stock of any business entity, or if they otherwise stand to personally gain if the contract is awarded to this vendor.

In accordance with City of Fort Lauderdale, FL Policy and Standards Manual, 6.10.8.3,

3.3. City employees may not contract with the City through any corporation or business entity in which they or their immediate family members hold a controlling financial interest (e.g. ownership of five (5) percent or more).

3.4. Immediate family members (spouse, parents and children) are also prohibited from contracting with the City subject to the same general rules.

**Failure of a vendor to disclose any relationship described herein shall be reason for debarment in accordance with the provisions of the City Procurement Code.**

**NAME**

**RELATIONSHIPS**

-

**In the event the vendor does not indicate any names, the City shall interpret this to mean that the vendor has indicated that no such relationships exist.**

CITY OF FORT LAUDERDALE  
PUBLIC WORKS DEPARTMENT

MINORITY BUSINESS ENTERPRISE (MBE) - WOMEN BUSINESS ENTERPRISE (WBE)

PRIME CONTRACTOR IDENTIFICATION FORM

In order to assist us in identifying the status of those companies doing business with the City of Fort Lauderdale, this form must be completed and returned with your bid package.

Name of Firm:

Address of Firm:

Telephone Number:

Name of Person Completing Form:

Title:

Signature:

Date:

City Project Number:

City Project Description:

Please check the item(s) which properly identify the status of your firm:

- Our firm is not a MBE or WBE.
- Our firm is a MBE, as at least 51 percent is owned and operated by one or more socially and economically disadvantaged individuals.
  - American Indian  Asian  Black  Hispanic
- Our firm is a WBE, as at least 51 percent is owned and operated by one or more women.
  - American Indian  Asian  Black  Hispanic



### MBE/WBE CONTRACTOR INFORMATION

The City, in a continuing effort, is encouraging the increased participation of minority and women-owned businesses in Public Works Department related contracts. Along those lines, we are requiring that each firm provide documentation detailing their own programs for utilizing minority and women-owned businesses.

Submit this information as a part of this bid package and refer to the checklist, to ensure that all areas of concern are covered. The low responsive bidder may be contacted to schedule a meeting to discuss these objectives. It is our intention to proceed as quickly as possible with this project, so your cooperation in this matter is appreciated.

#### CONTRACTOR CHECKLIST

List Previous City of Fort Lauderdale Contracts

	5
	6

Number of Employees in your firm

--Percent () Women

--Percent () Minorities

--Job Classifications of Women and Minorities

	5
	6

Use of minority and/or women subcontractors on past projects.

	5
	6

Nature of the work subcontracted to minority and/or women-owned firms.

	5
	6

How are subcontractors notified of available opportunities with your firm?

	5
	6

Anticipated amount to be subcontracted on this project.

	5
	6

Anticipated amount to be subcontracted to minority and/or women-owned businesses on this project.

	5
	6

### CONTRACT PAYMENT METHOD BY P-CARD

THIS FORM MUST BY SUBMITTED WITH YOUR RESPONSE

The City of Fort Lauderdale has implemented a Procurement Card (P-Card) program which changes how payments are remitted to its vendors. The City has transitioned from traditional paper checks to payment by credit card via MasterCard or Visa. This allows you as a vendor of the City of Fort Lauderdale to receive your payment fast and safely. No more waiting for checks to be printed and mailed.

Payments will be made utilizing the City's P-Card (MasterCard or Visa). Accordingly, firms must presently have the ability to accept credit card payment or take whatever steps necessary to implement acceptance of a credit card before the commencement of a contract.

Please indicate which credit card payment you prefer:

Master Card

Visa Card

Company Name:

Name (Printed)

Signature

Date:

Title

### QUESTIONNAIRE SHEET

PLEASE PRINT OR TYPE:

Firm Name:

President

Business Address:

Telephone:

Fax:

E-Mail Address:

What was the last project of this nature which you completed?

The following are named as three corporations and representatives of those corporations for which you have performed work similar to that required by this contract, and which the City may contact as your references (include addresses and telephone numbers):

How many years has your organization been in business?

Have you ever failed to complete work awarded to you; if so, where and why?

The name of the qualifying agent for the firm and his position is:

Certificate of Competency Number of Qualifying Agent:

Effective Date:

Expiration Date:

Licensed in:

Contractor's License #(s)

(County/State)

Expiration Date:

**NOTE: To be considered for award of this contract, the bidder must submit a financial statement upon request.**

**Contractor must have proper licensing prior to submitting bid and must submit evidence of same with bid.**

### QUESTIONNAIRE SHEET

1. Have you personally inspected the proposed work and have you a complete plan for its performance?

	5
	6

2. Will you sublet any part of this work? If so, list the portions or specialties of the work that you will.

- a)
- b)
- c)
- d)
- e)
- f)
- g)

3. What equipment do you own that is available for the work?

	5
	6

4. What equipment will you purchase for the proposed work?

	5
	6

5. What equipment will you rent for the proposed work?

	5
	6

**TRENCH SAFETY**

Bidder acknowledges that included in the appropriate bid items of his bid and in the Total Bid Price are costs for complying with the Florida Trench Safety Act, Florida Statutes 553.60 – 553.64. The bidder further identifies the costs of such compliance to be summarized below:

Trench Safety Measure (Description)	Units of Measure (LF/SF)	Unit (Quantity)	Unit Cost	Extended Cost
A. <input type="text"/>	<input type="text"/>	<input type="text"/>	\$ <input type="text"/>	\$ <input type="text"/>
B. <input type="text"/>	<input type="text"/>	<input type="text"/>	\$ <input type="text"/>	\$ <input type="text"/>
C. <input type="text"/>	<input type="text"/>	<input type="text"/>	\$ <input type="text"/>	\$ <input type="text"/>
D. <input type="text"/>	<input type="text"/>	<input type="text"/>	\$ <input type="text"/>	\$ <input type="text"/>

Total: \$

The bidder certifies that all trench excavation done within his control in excess of five feet (5') in depth shall be in accordance with the Occupational Safety and Health Administration's excavation safety standards, C.F.R. s. 1926.650 Subpart P., and the Florida Trench Safety Act, Florida Statutes 553.60-553.64.

Failure to complete the above may result in the bid being declared non-responsive.

DATE:    
(SIGNATURE)

STATE OF:  COUNTY OF:

PERSONALLY APPEARED BEFORE ME, the undersigned authority,

(Name of Individual Signing)

who, after first being duly sworn by me,  
 affixed his/her signature in the space provided above on this  
 day of , 20 .

NOTARY PUBLIC

My Commission Expires:

**CONSTRUCTION BID CERTIFICATION**

**Please Note:** All fields below must be completed. If the field does not apply to you, please note N/A in that field. If you are a foreign corporation, you may be required to obtain a certificate of authority from the department of state, in accordance with Florida Statute §607.1501 (visit <http://www.dos.state.fl.us/>).

Company: (Legal Registration)

Address:

City:  State:  Zip:

Telephone No.  FAX No.  Email:

Does your firm qualify for MBE or WBE status: MBE  WBE

If a corporation, state the name of the President, Secretary and Resident Agent. If a partnership, state the names of all partners. If a trade name, state the names of the individuals who do business under the trade name.

<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<b>Name</b>	<b>Title</b>	<b>Name</b>	<b>Title</b>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<b>Name</b>	<b>Title</b>	<b>Name</b>	<b>Title</b>

**ADDENDUM ACKNOWLEDGEMENT** - Bidder acknowledges that the following addenda have been received and are included in the bid:

| Addendum No.         | Date Received        |
|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| <input type="text"/> |

**VARIANCES:** If you take exception or have variances to any term, condition, specification, or requirement in this bid you must specify such variance in the space provided below or reference in the space provided below all variances contained on other pages within your bid. Additional pages may be attached if necessary. No variances will be deemed to be part of the bid submitted unless such is listed and contained in the space provided below. The City does not, by virtue of submitting a variance, necessarily accept any variances. If no statement is contained in the below space, it is hereby implied that your response is in full compliance with this competitive solicitation. If you do not have variances, simply mark N/A. If submitting your response electronically through BIDSYNC you must also click the "Take Exception" button.

The below signatory affirms that he has or will obtain all required permits and licenses from the appropriate agencies, and that his firm is authorized to do business in the State of Florida. The below signatory agrees to furnish all labor, tools, material, equipment and supplies, and to sustain all the expense incurred in doing the work set forth in strict accordance with the bid plans and contract documents at the unit prices indicated if awarded a contract. The below signatory has not divulged to, discussed, or compared this bid with other bidders, and has not colluded with any other bidder or parties to this bid whatsoever. Furthermore, the undersigned guarantees the truth and accuracy of all statements and answers contained in this bid. The below signatory also hereby agrees, by virtue of submitting or attempting to submit a bid, that in no event shall the City's liability for bidder's direct, indirect, incidental, consequential, special or exemplary damages, expenses, or lost profits arising out of this competitive solicitation process, including but not limited to public advertisement, bid conferences, site visits, evaluations, oral presentations, or award proceedings exceed the amount of Five Hundred Dollars (\$500.00). This limitation shall not apply to claims arising under any provision of indemnification or the City protest ordinance contained in this competitive solicitation.

**Submitted by:**

<input type="text"/>	<input type="text"/>
Name (printed)	Signature
<input type="text"/>	<input type="text"/>
Date:	Date:

## Question and Answers for Bid #473-11949 - 2nd Avenue Water Tank Restoration/Water Tower Lights

### Overall Bid Questions

There are no questions associated with this bid.