



Event # 319-2

Name: GTL-WWTP Pre-Treatment Building Improvements

Description: The City of Fort Lauderdale, Florida (City) is seeking bids from qualified bidders, hereinafter referred to as the Contractor, to provide Concrete Repairs to the George T. Lohmeyer Regional (GTL) Waste Water Treatment Plant (WWTP) Pre-Treatment Building, in accordance with the terms, conditions, and specifications contained in this Invitation To Bid (ITB).

Buyer: HEMMINGS TURNER, PAULETTE

Status: Pending Award

Event Type: IFB

Currency: USD

Sealed Bid: Yes

Respond To All Lines: Yes

Q & A Allowed: Yes

Number Of Amendments: 2

Display Bid Tabulation: Display When Event Awarded And Closed Or Canceled

Event Dates

Preview:

Q & A Open: 07/26/2024 04:00:00 PM

Open: 07/25/2024 12:00:00 PM

Q & A Close: 08/13/2024 05:00:00 PM

Close: 08/23/2024 02:00:00 PM

Dispute Close:

Questions

Question	Response Type	Attachment
Did you sign and attach the required forms?	Yes No	Event 319 Required Forms.pdf
Kindly acknowledge Addendum 1 - Anti-Human Trafficking Affidavit to be completed:	Yes No	
Per Florida Statute 787.06 (2024), (13) When a contract is executed, renewed, or extended between a nongovernmental entity and a governmental entity, the nongovernmental entity must provide the governmental entity with an affidavit signed by an officer or a representative of the nongovernmental entity under penalty of perjury attesting that the nongovernmental entity does not use coercion for labor or services as defined in this section. For purposes of this subsection, the term "governmental entity" has the same meaning as in s. 287.138(1).		

Event # 319-2: GTL-WWTP Pre-Treatment Building Improvements

Attachments

Name	Description	Attachment
Event 319 Specification Document	Event 319 Specification Document	Event 319 GTL-WWTP Pre Treatment Building Improvement.pdf
Event 319 - Drawings (Plans)	Event 319 - Drawings (Plans)	12170-BID-PLANS-BINDER-07.10.24_S&S.pdf
Event 319 - Division Documents	Event 319 - Division Documents	12170-BID-SPEC-06.26.24.pdf
Addendum 1	Addendum 1 Add Anti-Human Trafficking Affidavit and Section 22.13 Anti-Human Trafficking Language to the Sample Agreement.	Addendum 1.pdf
Addendum 2	Addendum 2 - Extends bid close date to 8/23/2024 and Q& A Date to 8/13/2024	Addendum 2.pdf

Contacts

Name	Email Address
PAULETTE HEMMINGS TURNER	pturner@fortlauderdale.gov

Commodity Codes

Commodity Code	Description
906-38	General Construction - Architectural
909-22	Building Construction, Non-Residential (Office Bldg., etc.)
909-24	Building Construction, Commercial and Institutional
909-30	Building Construction (Not Otherwise Classified)
909-60	Maintenance and Repair, Industrial Building
909-61	Maintenance and Repair, Non-Residential Building
910-52	Maintenance and Repair Services, Building (Not Otherwise Cla

Event # 319-2: GTL-WWTP Pre-Treatment Building Improvements

Line Details

Line 1: 1) Mobilization

Description: 1) Mobilization

Item: 1 MOBILIZATION 1) Mobilization

Commodity Code: 906-38 General Construction - Architectural

Quantity: 1.0000 **Unit of Measure:** LS

Requested Delivery Date: 12/28/2024

Require Response: Yes

Price Breaks Allowed: No

Allow Alternate Responses: No

Add On Charges Allowed: No

Line 2: 2) Demolition

Description: 2) Demolition

Item: 2 DEMOLITION 2) Demolition

Commodity Code: 906-38 General Construction - Architectural

Quantity: 855.0000 **Unit of Measure:** SF

Requested Delivery Date: 12/28/2024

Require Response: Yes

Price Breaks Allowed: No

Allow Alternate Responses: No

Add On Charges Allowed: No

Line 3: 3) Type I Concrete Repair

Description:

Event # 319-2: GTL-WWTP Pre-Treatment Building Improvements

3) Type I Concrete Repair

Item: TYPE I CONCRETE REPAIR 3) Type I Concrete Repair

Commodity Code: 906-38 General Construction - Architectural

Quantity: 525.0000 **Unit of Measure:** SF

Requested Delivery Date: 12/28/2024

Require Response: Yes

Price Breaks Allowed: No

Allow Alternate Responses: No

Add On Charges Allowed: No

Line 4: 4) Type II Concrete Repair

Description: 4) Type II Concrete Repair

Item: TYPE II CONCRETE REPAIR 4) Type II Concrete Repair

Commodity Code: 906-38 General Construction - Architectural

Quantity: 270.0000 **Unit of Measure:** SF

Requested Delivery Date: 12/28/2024

Require Response: Yes

Price Breaks Allowed: No

Allow Alternate Responses: No

Add On Charges Allowed: No

Line 5: 5) Type III Concrete Repair

Description: 5) Type III Concrete Repair

Item: TYPE III CONCRETE REPAIR 5) Type III Concrete Repair

Commodity Code: 906-38 General Construction - Architectural

Event # 319-2: GTL-WWTP Pre-Treatment Building Improvements

Quantity: 60.0000

Unit of Measure: SF

Requested Delivery Date: 12/28/2024

Require Response: Yes

Price Breaks Allowed: No

Allow Alternate Responses: No

Add On Charges Allowed: No

Line 6: 6) Temporary Shoring System

Description: 6) Temporary Shoring System

Item: TEMPORARY SHORING SYSTEM 6) Temporary Shoring System

Commodity Code: 906-38 General Construction - Architectural

Quantity: 1.0000

Unit of Measure: LS

Requested Delivery Date: 12/28/2024

Require Response: Yes

Price Breaks Allowed: No

Allow Alternate Responses: No

Add On Charges Allowed: No

Line 7: 7) Protective Coating

Description: 7) Protective Coating

Item: PROTECTIVE COATING 7) Protective Coating

Commodity Code: 906-38 General Construction - Architectural

Quantity: 855.0000

Unit of Measure: SF

Requested Delivery Date: 12/28/2024

Require Response: Yes

Price Breaks Allowed: No

Allow Alternate Responses: No

Event # 319-2: GTL-WWTP Pre-Treatment Building Improvements

Response:

Add On No
Charges
Allowed:

Allowed:

Responses:

CITY OF FORT LAUDERDALE
CONTRACT AND SPECIFICATIONS PACKAGE

BID/EVENT NO. 319

PROJECT NO. P12170

**GTL-WWTP PRE-TREATMENT BUILDING
IMPROVEMENTS**



PAULETTE HEMMINGS TURNER
Senior Procurement Specialist
Telephone: (954) 828-5139 E-mail: PTurner@fortlauderdale.gov

TABLE OF CONTENTS

<u>Description</u>	<u>Pages</u>
I. BID INFORMATION	
Invitation to Bid	1-3
Instruction to Bidders	1- 6
General Conditions	1-10
Special Conditions	1-6
II.CONSTRUCTION AGREEMENT (SAMPLE)	1-40
III. TECHNICAL SPECIFICATIONS	
DIVISION 1 - GENERAL REQUIREMENTS	
01010 Summary of Work	2
01015 Definitions & Standards	3
01020 Measurement and Payment.....	4
01045 Cutting & Patching.....	4
01065 Permits & Fees	1
01071 Standard Reference.....	9
01200 Project Meetings & Reports	3
01300 Submittals	8
01310 Construction Progress Schedules	6
01320 Construction Video & Photographs	2
01410 Testing & Quality Control.....	3
01530 Temporary Barriers & Controls	4
01600 Material and Equipment	5
01630 Product Options & Substitutions.....	2
01700 Contract Closeout	4
DIVISION 2 - SITE CONSTRUCTION	
02050 Demolition.....	3
02215 Protection of Existing Structures	4
DIVISION 3 - CONCRETE	
03100 Concrete Formwork and Accessories	12
03200 Concrete Reinforcement	5
03300 Cast in Place Concrete.....	22
03312 Self Consolidating Concrete (SCC).....	26
03350 Concrete Finishes.....	2
03600 Grout.....	10
03730 Concrete Restoration	11
DIVISION 6 – WOODS	
06100 Rough Carpentry.....	4

TABLE OF CONTENTS (continued)

DIVISION 9 – FINISHES

09900	Protective Coating.....	17
-------	-------------------------	----

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

- Affidavit of Compliance with Foreign Entity Laws
- CITB Questionnaire Sheet
- CITB Specific References
- CITB Trench Safety
- City of Fort Lauderdale Bid/Proposal Construction Bid Certification Page
- Contract Payment Method
- Disadvantaged Business Enterprise Preference Certification
- E-Verify Statement
- Local Business Preference Certification
- Non-Collusion Statement
- Non-Discrimination Certification Form

INVITATION TO BID

Sealed bids will be received electronically until **2:00 p.m.**, local time, on **August 16, 2024**, and opened online immediately thereafter for **BID/EVENT NO., 319, PROJECT NO., P12170, GTL-WWTP Pre-Treatment Building Improvements**

Please be advised that effective immediately, and until further notice, all Invitation to Bids, Request for Proposals, Request for Qualifications, and other solicitations led by the City of Fort Lauderdale will be opened electronically via the [City's on-line strategic sourcing platform](#) at the date and time indicated on the solicitation. All openings will be held on the City's on-line strategic sourcing platform.

In the event of any conflict or discrepancy between bid price(s) submitted by bidder electronically into the City's online strategic sourcing platform Unit Price field(s), any other forms or attachments (whether part of the City's solicitation documents or documents created and uploaded by the bidder, or another section/field of the System, the online unit price(s) **inputted** electronically into the System by the bidder shall govern.

Anyone requesting assistance or having further inquiry in this matter must contact the Procurement Specialist indicated in the solicitation, via the Question and Answer (Q&A) forum on the City's online strategic sourcing platform before the Last Day for Questions indicated in the Solicitation.

This project is located at George T. Lohmeyer Regional (GTL) Waste Water Treatment Plant (WWTP) Pre-Treatment Building, in the City of Fort Lauderdale. The work to be accomplished under this contract includes, but is not limited to, the restoration of concrete spalling, encompassing tasks such as the removal and repair of unsound concrete, alongside cleaning reinforcement where corrosion is below 20% and replacing it where corrosion exceeds this threshold. Areas targeted for rehabilitation include, but are not restricted to, essential structural elements like columns, beams, walls, and slabs. The methodology will adhere to industry standards to ensure structural integrity and longevity, while rigorous quality assurance measures will be implemented to verify the effectiveness of repairs.

THE FOLLOWING IS APPLICABLE TO THIS SOLICITATION IF CHECKED:

- LUMP SUM BID** - City shall pay awarded bidder the Contract Price for the performance of work described in this Invitation for Bid. Payment shall be at the lump sum price stated in this Invitation to Bid and/or resultant contract. This price shall be full compensation for all costs, including overhead and profit, associated with completion of all work in full conformity with the requirements as stated or shown, or both, in the contract documents. The cost of any item of work not covered in this solicitation shall still be provided and the cost borne by the contractor. **NO CHANGE ORDERS WILL BE ALLOWED UNLESS IT IS OWNER-DRIVEN AND INITIATED BY THE CITY.**

Drawing Plans: This Project consists of Drawing File No.,22055, consisting of 10 sheets. Drawing plans may be obtained **free of charge** at the City's online strategic sourcing platform.

Licensing Requirements: Possession of a Florida Licensed General Contractor is required for this Project.

Any sub-contractors employed by the Proposer shall be licensed and insured in accordance with this solicitation. Additionally, it is the Proposer's responsibility for ensuring that any sub-contractors' work always meets the requirements of this solicitation.

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

Pre-Bid Conference/Site visit: There will not be a pre-bid conference and/or site visit for this Invitation to Bid.

It will be the sole responsibility of the bidder to inspect the City's location(s)/facilities and become familiar with the scope of the City's requirements and systems prior to submitting a bid. 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 bidder has familiarized himself with the nature and extent of the work, equipment, materials, and labor required.

Bid Security: A certified check, cashier's check, bank officer's check or bid bond for **TEN percent (10%)** of the bid amount, made payable to the City of Fort Lauderdale, Florida, shall accompany each offer.

Bid Bonds:

Bidders can submit bid bonds **four** different ways.

- 1) Bidders may submit bid bonds **electronically** directly through the City's online strategic sourcing platform using **Surety 2000**.
- 2) Bidders may **upload** their original executed bid bond on the City's online strategic sourcing platform to accompany their electronic bids and deliver the original, signed and sealed hard copy to the Finance Department, Procurement Services Division, 101 NE 3rd Avenue, Suite 1650, Fort Lauderdale, Florida 33301-1016, **within five (5) business days** after bid opening, with the company name, bid number and title clearly indicated on the envelope.
- 3) Bidders can **hand deliver** their original, signed and sealed bid bond in a sealed envelope to the Finance Department, Procurement Services Division, 101 NE 3rd Avenue, Suite 1650, Fort Lauderdale, Florida 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 original, signed and sealed bid bond to the Finance Department, Procurement Services Division, 101 NE 3rd Avenue, Suite 1650, Fort Lauderdale, Florida 33301-1016, **before time of bid opening**, with the company name, bid number and title clearly indicated on the envelope. **NOTE: Bond must be received in Procurement and time stamped before bid opening.**

It will be the sole responsibility of the bidder to ensure that its 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 THE CITY'S ONLINE STRATEGIC SOURCING PLATFORM.**

Certified Checks, Cashier's Checks and Bank Drafts:

These **CANNOT** be submitted via the City's online strategic sourcing platform, 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, 101 NE 3rd Avenue, Suite 1650, Fort Lauderdale, Florida 33301-1016, with the bid number and title clearly indicated on the envelope.

It is the bidder's sole responsibility to ensure that its bid bond or other bid security is received by the Procurement Services Division before the 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 Q&A platform provided on the City's online strategic sourcing platform. 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. **Bidders 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 bidder 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 – <https://www.fortlauderdale.gov/government/departments-a-h/finance/procurement-services>
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 bid 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.

CONCERNING SUB-CONTRACTORS, SUPPLIERS, AND OTHERS - The amount of work that is sublet by the Bidder shall be limited by the condition that the Bidder shall, with his own organization, perform at least forty percent (40%) of the total dollar amount of the Work to be performed under the Agreement.

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 or City staff shall relieve the Contractor from any risk or from fulfilling all terms of the contract.

INCONSISTENCIES – Any inconsistency between different provisions of the plans, specifications, bid or contract, or any point requiring explanation must be inquired by the bidder, in writing, at least ten (10) days prior to the time set for opening bids. After bids 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 the City's online strategic sourcing platform. 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 addenda have been issued in the City's online strategic sourcing platform.** Failure of any bidder to receive any such addenda or interpretation shall not relieve any bidder from any obligation under its bid as submitted. All addenda so issued shall become a part of the contract document. **Bidder** shall verify in the City's online strategic sourcing platform that it 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 BIDS - Each bid and its accompanying statements **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. In the event of any conflict or discrepancy between bid price(s) submitted by bidder electronically into the City's online strategic sourcing platform Unit Price field(s), any other forms or attachments (whether part of the City's solicitation documents or documents created and uploaded by the bidder, or another section/field of the System, the online unit price(s) **inputted** electronically into the System by the bidder shall govern.

The bid 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 bid. No bid 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 made payable to the City of Fort Lauderdale, or a bid bond in favor of the City of Fort Lauderdale shall accompany each bid as evidence of the good faith and responsibility of the bidder. The amount of the check or bond shall be retained by the City as liquidated damages in the event the bidder whose bid is accepted refuses to or fails to enter into a contract for the execution of the work solicited in this Invitation to Bid.

The bid bond or check shall be a guarantee that the successful bidder will promptly execute a contract satisfactory to the City for the work solicited in this Invitation to Bid and furnish good and sufficient bonds.

Following the full execution of a contract for the work solicited in this Invitation to Bid and the successful bidder's provision of good and sufficient bonds, in the event bid security was provided by check, the amount of the bid security accompanying the successful bidder's bid will be refunded to the successful bidder, or in the event bid security was provided by a bond, the bond accompanying the successful bidder's bid will be returned to the successful bidder. In the event the successful bidder fails to enter into, execute, and deliver a contract and furnish the required bonds within ten (10) days after the City provides notice to the successful bidder to deliver the executed contract and the required bonds, the bid bond shall immediately be payable to the City of Fort Lauderdale, or in the case of a check, the City shall retain the amount of the check, as liquidated damages. The City's retention of such amount shall not be construed as a penalty or forfeiture.

FILLING IN BIDS - All prices must be electronically submitted in the bid pages, and bids must fully cover all items for which prices are asked and no other. 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 bid. In the event of any conflict or discrepancy between bid price(s) submitted by bidder electronically into the City's online strategic sourcing platform Unit Price field(s), any other forms or attachments (whether part of the City's solicitation documents or documents created and uploaded by the bidder, or another section/field of the System, the online unit price(s) **inputted** electronically into the System by the bidder shall govern.

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 cost to the City for approval prior to proceeding with the work.

TERMINATION 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.

CAUSES FOR REJECTION - No bid will be canvassed, considered or accepted which, in the opinion of the City 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 bid 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 bids will be rejected, if there is reason to believe that collusion exists among bidders. A bid 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 bids and to waive such technical errors as may be deemed best for the interests of the City.

BID PROTEST PROCEDURE: Any 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 – Deputy Director of Finance, 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: <https://www.fortlauderdale.gov/government/departments-a-h/finance/procurement-services/notices-of-intent-to-award>

The complete protest ordinance may be found on the City's website at the following link:
[https://library.municode.com/fl/fort_lauderdale/codes/code_of_ordinances?nodeId=COOR_CH2AD_A
RTVFI_DIV2PR_S2-182DIREPRAWINAW](https://library.municode.com/fl/fort_lauderdale/codes/code_of_ordinances?nodeId=COOR_CH2AD_ARTVFI_DIV2PR_S2-182DIREPRAWINAW)

WITHDRAWALS - Any bidder may, without prejudice to himself, withdraw its bid at any time prior to the expiration of the time during which bids 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 bid. After expiration of the period for receiving bids, no bids 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 responsive and responsible, 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.

DRAWING PLANS - Drawing plans may be obtained **free of charge** from the City's on-line strategic sourcing platform.

SURETY BOND – N/A

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 (2022).

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.

LOCAL BUSINESS PREFERENCE - Section 2-186, Code of Ordinances of the City of Fort Lauderdale, provides for a local business preference. In order to be considered for a local business preference, a proposer must include the Local Business Preference Certification Statement of this ITB, as applicable to the local business preference class claimed at the time of Bid submittal:

Upon formal request of the City, based on the application of a Local Business Preference, the Proposer shall, within ten (10) calendar days, submit the following documentation to the Local Business Preference Class claimed:

- a. Copy of City of Fort Lauderdale current year business tax receipt, or Broward County current year business tax receipt, and
- b. List of the names of all employees of the proposer and evidence of employees' residence within the geographic bounds of the City of Fort Lauderdale or Broward County, as the case may be, such as current Florida driver license, residential utility bill (water, electric, telephone, cable television), or other type of similar documentation acceptable to the City.

Failure to comply at time of bid submittal shall result in the Proposer being found ineligible for the local business preference.

Definitions:

- a. The term "Class A business" shall mean any business that has established and agrees to maintain a permanent place of business located in a non-residential zone, staffed with full-time employees within the limits of the city, and shall maintain a staffing level for the proposed work of at least fifty percent (50%) who are residents of the City of Fort Lauderdale.
- b. The term "Class B business" shall mean any business that has established and agrees to maintain a permanent place of business located in a non-residential zone, staffed with full-time employees within the limits of the city, or shall maintain a staffing level for the proposed work of at least fifty percent (50%) who are residents of the City of Fort Lauderdale.
- c. The term "Class C business" shall mean any business that has established and agrees to maintain a permanent place of business located in a non-residential zone, staffed with full-time employees within the limits of Broward County.
- c. The term "Class D business" shall mean any business that does not qualify as a Class A, Class B, or Class C business.

The complete local business preference ordinance may be found on the City's web site at the following link:

https://library.municode.com/fl/fort_lauderdale/codes/code_of_ordinances?nodeId=COOR_CH2AD_ARTVFI_DIV2PR_S2-186LOBUPR

DISADVANTAGED BUSINESS ENTERPRISE PREFERENCE - Section 2-185, Code of Ordinances of the City of Fort Lauderdale, provides for a disadvantaged business preference. In order to be considered for a disadvantaged business preference, a proposer must include a certification from a government agency, as applicable to the disadvantaged business preference class claimed at the time of Bid submittal:

Upon formal request of the City, based on the application of a Disadvantaged Business Preference the Proposer shall within ten (10) calendar days submit the following documentation to the Disadvantaged Business Enterprise Preference Class claimed:

- a. Copy of City of Fort Lauderdale current year business tax receipt, or the Tri-County (Broward, Dade, West Palm Beach) current year business tax receipt, or proof of active Sunbiz status and
- b. List of the names of all employees of the proposer and evidence of employees' residence within the geographic bounds of the City of Fort Lauderdale or the Tri-County, as the case may be, such as current Florida driver license, residential utility bill (water, electric, telephone, cable television), or other type of similar documentation acceptable to the City.

Failure to comply at time of bid submittal shall result in the Proposer being found ineligible for the Disadvantaged Business Enterprise Preference business preference.

The complete Disadvantaged Business Preference ordinance may be found on the City's website at the following link: <https://www.fortlauderdale.gov/home/showpublisheddocument?id=56883>

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-11-42 & Resolution No. 07-101, Lobbying Activities. Copies of Ordinance No., C-11-42, and Resolution No. 07-101, may be obtained from the City Clerk's Office at 1 East Broward Boulevard, Suite 444, Fort Lauderdale, Florida 33301.

The Ordinance may also be viewed on the City's website at <https://www.fortlauderdale.gov/home/showdocument?id=6036>.

GENERAL CONDITIONS

Unless otherwise modified in the Project's 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 bid 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.

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

"Contractor" – shall mean the successful Bidder who has been employed by the City to perform the construction and related 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. In the case of any inconsistency in or between any parts of this Contract, the Project Manager shall determine which shall prevail.

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

"Engineer" - shall include the terms "professional engineer" and "licensed engineer" and means a person who is licensed to engage in the practice of engineering under Florida Statute, Chapter 471. An Engineer may be a City employee or a consultant hired by the City.

"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.

GENERAL CONDITIONS (continued)

"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 a professional designated by the City to manage the Project under the supervision and direction of the Public Works Director or designee.

"Public Works Director" – shall mean the Public Works Director of the City of Fort Lauderdale.

"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 Project Manager.

"Sub-contractor" - 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, field conditions, 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.

Any failure by the Contractor to acquaint itself with all the Site conditions shall not relieve Contractor from responsibility for properly estimating the difficulty or cost thereof under the Contract Documents.

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 Contractor 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. The following requirements shall be met in order for the substitution to be considered:

1. Requests for substitution shall be accompanied by such technical data, as the party making the request desires to submit. The Project Manager will consider reports from

reputable independent testing laboratories, verified experience records from previous users and other written information valid in the circumstances; and

2. 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
3. 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
4. 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.

If a proposed substitution is approved by the Project Manager, 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 – CONSTRUCTION RESOURCES – Contractor shall provide all labor and equipment necessary to complete the installation within a timely manner. Contractor shall provide details as to manpower and equipment to be dedicated to the project in its Work Plan. Contractor is responsible for making arrangements, obtaining and purchasing construction water services if required to complete the work.

GC - 05 - CONTROL OF THE WORK - The Project Manager shall have full control and direction of the Work in all respects. The Project Manager 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 Project Manager may desire respecting the quality of the Work and materials and the manner of conducting the Work. Should the Contractor be 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 Project Manager 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 Project Manager, 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 Project Manager, as will ensure 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.

GC - 06 - SUB-CONTRACTOR - The Contractor shall not sublet, in whole or any part of the Work without the written consent and approval of the Project Manager. Within ten (10) days after official notification of starting date, the Contractor must submit in writing, to the Project Manager, a list of all Sub-contractors. No Work shall be done by any sub-contractor until such Sub-contractor has been officially approved by the Project Manager. A sub-contractor not appearing on the original list will not be approved without written request submitted to the Project Manager and approved by the Public Works Director. In all cases, the Contractor shall give his personal attention to the Work of the Sub-contractors and the Sub-contractor is liable to be discharged by the Contractor, at the direction of the Project Manager, for neglect of duty, incompetence or misconduct.

Acceptance of any sub-contractor, other person, or organization by the Project Manager shall not constitute a waiver of any right of Project Manager to reject defective Work or Work not in conformance with the Contract Documents.

Contractor shall be fully responsible for all acts and omissions of its Sub-contractors 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 sub-contractor 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 sub-contractor or other person, or organization, except as may otherwise be required by law.

GC - 07 - QUANTITIES - Contractor recognizes and agrees that the quantities shown on plans and Bid/Price Schedule are estimates only and may vary during actual construction. No change shall 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 Project Manager 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 Public Works Director 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 - 08 - 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 - 09 - PERMITS AND PROTECTION OF PUBLIC – Permits on file with the City and/or those permits to be obtained by the Contractor, 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.

Contractor shall secure all permits and licenses required for completing the Project. Contractor will obtain the necessary State, County, and City construction/work permits if required.

The Contractor shall comply with all applicable Codes, Standards, Specifications, etc. related to all aspects of the Project.

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 to all affected parties prior to proceeding with the Work.

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.

GC - 10 - DISEASE REGULATIONS - The Contractor shall enforce all sanitary regulations and take all precautions against infectious diseases as the Project Manager 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 - 11 - CONTRACTOR TO CHECK PLANS, SPECIFICATIONS, AND DATA - The Contractor shall verify all dimensions, quantities, and details shown on the plans, supplementary drawings, schedules, and shall notify the Project Manager 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 therefrom nor from rectifying such condition at its own expense.

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

GC - 13 - SAFEGUARDING MARKS - The Contractor shall safeguard all points, stakes, grade marks, monuments, and benchmarks 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 Professional surveyor registered in the State of Florida if disturbed or destroyed during the course of construction.

GC - 14 - RESTROOM FACILITIES - Contractor shall provide portable toilet facilities for employee's use at a location within the Work site to be determined by the City.

GC - 15 - PROGRESS MEETINGS - Weekly Status meetings will be conducted with representatives from the City and the Contractor. Contractor shall budget time to participate in such meetings. A well-run Project should result in short meetings.

GC - 16 - ISSUE RESOLUTION - Should Contractor become engaged in a dispute with a resident or a City employee, the Contractor shall report the situation to the Project Manager immediately. It shall be mandatory that the City participate in any dispute resolution. Failure of Contractor personnel to notify the City shall obligate Contractor to replace the offending employee immediately if requested by the City.

GC - 17 - CITY SECURITY-CONTRACTOR AND SUBCONTRACTOR EMPLOYEE INFORMATION - Prior to commencing work, Contractor shall provide to the City a list of all personnel and sub-contractors on site. The list will include the name, address, birth date and driver's license number for all personnel. All personnel and subcontractors on site will have on their person a company

photo ID during all stages of the construction. Contractor shall provide standard required personal information per current City procedures.

GC - 18 - POST-CONSTRUCTION SURVEY - The Contractor shall provide as-built survey, sealed and signed by a registered surveyor in the State of Florida, as a condition of final payment.

GC - 19 - KEY PERSONNEL - Contractor shall provide as part of the Work Plan, resumes for all key project personnel providing supervision and project management functions. Resumes shall include work history and years of experience performing this type of work.

GC - 20 - EXISTING UTILITY SERVICE - All existing utility service shall be maintained with a minimum of interruption at the expense of the Contractor.

GC - 21 - 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 - 22 - 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 bodily injury and property damage insurance in amounts satisfactory to the Florida East Coast Company. This insurance requirement shall be verified by the contractor with the Florida East Coast Company prior to commencing work, and maintained during the life of the Contract.

GC - 23 - 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 Project Manager 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 - 24 - 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 - 25 - 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 the cost of other parts of the Work.

Should the Contractor fail to abate a dust nuisance the Project Manager may stop the Work until the issue is resolved to the City's satisfaction.

GC - 26 - SITE CLEANUP AND RESTORATION – The Contractor shall remove all debris and unused or discarded materials from the work site daily. Contractor shall clean the work site to remove all directional drilling "Driller's Mud" materials. No "Driller's Mud" residue shall be allowed to remain in the soil or on the surface of the land or vegetation. All debris and drilling materials must be disposed of offsite at an approved location.

The Contractor shall promptly restore all areas disturbed that are outside the Project limits in equal or better condition at no additional cost to the City.

GC - 27 - COURTEOUS BEHAVIOR AND RESPECT FOR RESIDENTS AND PROPERTY – The Contractor and its employees, associates and sub-contractors shall maintain courteous behavior at all times and not engage in yelling, loud music, or other such activities. Contractor's employees shall not leave trash or other discarded items at the Work Site, especially on any private property. In the event complaints arise, Contractor shall immediately remove such offending employees from the project if requested to do so by the Project Manager. Contractor's employees shall not trespass on any private property unless necessary to complete the work but with prior permission from the owner.

Contractor shall notify and obtain permission from the residents 24 hours in advance when planning to work within the resident's property. In addition, Contractor shall notify the resident prior to entering their property to perform work or inspect/investigate the work site. Contractor shall not block residents' driveways unnecessarily. Contractor shall not park equipment on landscaped areas when the vehicle is not needed for the current construction activities. Contractor shall be responsible for repair and/or replacement of all damaged landscaping within 48 hours including repairing vehicle wheel impressions, irrigation systems, lighting systems, structures, or any other items of resident's property. Contractor shall not destroy, damage, remove, or otherwise negatively impact any landscaping within or outside the right-of-way without prior approval from the Project Manager.

GC - 28 - PLACING BARRICADES AND WARNING LIGHTS - The Contractor shall furnish and place, at Contractor's 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 Project Manager 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 - 29 - TRAFFIC CONTROL - The Contractor shall coordinate all Work and obtain, through the City's Transportation and Mobility Department, Broward County, Florida Department of

Transportation, as applicable, any permits required to detour traffic or close any street before starting to work in the road.

All traffic control devices, flashing lights, signs and barricades shall be maintained in working condition at all times and conform to Manual of Uniform Traffic Control Devices (MUTCD), latest edition.

GC - 30 - COORDINATION - The Contractor shall notify all utilities, transportation department, etc., in writing, with a copy to the Project Manager before construction is started and shall coordinate its 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 its Work and dispose of its materials so as to not interfere with the operation of other contractors engaged upon adjacent work, and to join its Work to that of others in a proper manner, and to perform its Work in the proper sequence in relation to that of other contractors as may be directed by the Project Manager.

Each Contractor shall be responsible for any damage done by it or its agents to the work performed by another contractor.

GC - 31 - 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 - 32 - 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, and that it does not have business operations in Cuba or Syria, as provided in Section 287.135, Florida Statutes (2022), as may be amended or revised. The Contractor certifies that it is not on the Scrutinized Companies that Boycott Israel List created pursuant to Section 215.4725, Florida Statutes (2022), as may be amended or revised, and that it is not engaged in a boycott of Israel. 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 (2022), 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 (2022), as may be amended or revised, 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 (2022), as may be amended or revised.

By submitting a bid or response, the company, principals, or owners certify that it is not listed on the Scrutinized Companies with Activities in Sudan List or listed on the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List or is engaged in business operations in Cuba or Syria.

GC - 33 - 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 - 34 - 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 Bidder's response to the Solicitation purporting to require confidentiality of any portion of the Bidder'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 Bidder submits any documents or other information to the City which the Bidder claims is Trade Secret information and exempt from Florida Statutes Chapter 119.07 ("Public Records Laws"), the Bidder shall clearly designate that it is a Trade Secret and that it is asserting that the document or information is exempt. The Bidder 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 Bidder's response to the Solicitation constitutes a Trade Secret. The City's determination of whether an exemption applies shall be final, and the bidder 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. In addition, the bidder agrees to defend, indemnify, and hold harmless the City and the City's officers, employees, and agents, against any loss or damages incurred by any person or entity as a result of the City's treatment of records as exempt from disclosure or confidential. Bids purporting to be subject to copyright protection in full or in part will be rejected. The bidder authorizes the City to publish, copy, and reproduce any and all documents submitted to the City bearing copyright symbols or otherwise purporting to be subject to copyright protection.

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 (2023), TO THE CONTRACTOR'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS AGREEMENT, CONTACT THE CUSTODIAN OF PUBLIC RECORDS AT:

Telephone Number: (954) 828-5002

Mailing Address: City Clerk's Office
1 East Broward Boulevard, Suite 444
Fort Lauderdale, FL 33301

E-mail: prcontract@fortlauderdale.gov

Contractor shall:

1. Keep and maintain public records 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 (2023), 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 Agreement if the Contractor does not transfer the records to the City.
4. Upon completion of the Agreement, 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 Agreement, 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 Agreement, 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.

SPECIAL CONDITIONS

01. PURPOSE

The City of Fort Lauderdale, Florida (City) is seeking bids from qualified, experienced, and licensed firm(s), hereinafter referred to as the Contractor, Bidder, or Proposer, to provide Concrete Repairs for the City, in accordance with the terms, conditions, and specifications contained in this Invitation to Bid (ITB).

02. TRANSACTION FEES

The City uses the [City's on-line strategic sourcing platform](#) INFOR, 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 its bid is submitted electronically through the [City's on-line strategic sourcing platform](#), and that any bid security reaches the City of Fort Lauderdale, Procurement Services Division, 101 North East 3rd Avenue, Suite 1650, Fort Lauderdale, Florida 33301-1016, 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 SUBMITTALS WILL NOT BE ACCEPTED. PLEASE SUBMIT YOUR BID RESPONSE ELECTRONICALLY.** In the event of any conflict or discrepancy between bid price(s) submitted by bidder electronically into the City's online strategic sourcing platform Unit Price field(s), any other forms or attachments (whether part of the City's solicitation documents or documents created and uploaded by the bidder, or another section/field of the System, the online unit price(s) **inputted** electronically into the System by the bidder shall govern.

04. INFORMATION OR CLARIFICATION

For information concerning procedures for responding to this solicitation, contact Senior Procurement Specialist, Paulette Hemmings Turner at (954) 828-5139 or email at PTurner@fortlauderdale.gov. Such contact shall be for clarification purposes only.

For information concerning technical specifications, please utilize the question / answer feature provided by the [City's on-line strategic sourcing platform](#). Questions of a material nature must be received prior to the cut-off date specified in the RFP Schedule. Material changes, if any, to the scope of services or bidding procedures will only be transmitted by written addendum. Contractors. Please note: Proposals shall be submitted as stated in PART IV – Submittal Requirements. No part of your proposal can be submitted via FAX. No variation in price or conditions shall be permitted based upon a claim of ignorance. Submission of a proposal will be considered evidence that the Contractor has familiarized themselves with the nature and extent of the work, and the equipment, materials, and labor required. The entire proposal must be submitted in accordance with all specifications contained in this solicitation. The questions and answers submitted in the [City's on-line strategic sourcing platform](#) 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 7 calendar days of the date of the Notice to Proceed.

- 5.2 The Work shall be Substantially Completed within 180 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 200 calendar days after the Contract Time commences to run as provided in the Notice to Proceed.

06. BID SECURITY

A certified check, cashier's check, bank officer's check or bid bond for **TEN percent (10%)** of the bid amount, made payable to the City of Fort Lauderdale, shall accompany each offer.

07. REQUIRED LICENSES/CERTIFICATIONS

Contractor must possess the following licenses/certifications to be considered for award:
Florida General Contractor License

Any sub-contractors employed by the Proposer shall be licensed and insured in accordance with this solicitation. Additionally, it is the Proposer's responsibility for ensuring that any sub-contractors' work meets the requirements of this solicitation at all times.

Note: Contractor must have proper licensing and shall submit evidence of same with its bid response.

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 the bid response.

The contractor shall have at least five (5) years' previous construction experience in constructing additions/modifications to existing public buildings in the State of Florida. Bidder shall submit proof of construction experience for a minimum of three (3) projects of similar scope and scale (or larger) and shall, for each project listed, identify location; dates of construction; project name and overall scope; scope of work that was self-performed by Contractor; and client's name, address, telephone number and e-mail address.

NOTE: REFERENCES SHALL NOT INCLUDE ONLY CITY OF FORT LAUDERDALE EMPLOYEES OR WORK PERFORMED FOR THE CITY. THE CITY IS ALSO INTERESTED IN WORK EXPERIENCE AND REFERENCES FROM ENTITIES OTHER THAN THE CITY OF FORT LAUDERDALE.

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's permit fees exceed the allowance indicated, the City will reimburse the contractor the actual amount of the City's permit fees required for project completion.

Allowances	\$
Permit fees and testing allowance	1,000.00
TOTAL	1,000.00

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

Insurance

As a condition precedent to the effectiveness of this Agreement, during the term of this Agreement and during any renewal or extension term of this Agreement, Contractor shall cause at its sole expense, to provide insurance of such types and with such terms and limits as noted below. Providing proof of and maintaining adequate insurance coverage are material obligations of Contractor. Contractor shall provide the City a certificate of insurance evidencing such coverage. Contractor's insurance coverage shall be primary insurance for all applicable policies, in respect to the City's interests. The limits of coverage under each policy maintained by Contractor shall not be interpreted as limiting Contractor's liability and obligations under this Agreement. All insurance policies shall be through insurers authorized or eligible to write policies in the State of Florida and possess an A.M. Best rating of A-, VII or better, subject to approval by the City's Risk Manager.

The coverages, limits, and/or endorsements required herein protect the interests of the City, and these coverages, limits, and/or endorsements shall in no way be relied upon by Contractor for assessing the extent or determining appropriate types and limits of coverage to protect Contractor against any loss exposures, whether as a result of this Agreement or otherwise. The requirements contained herein, as well as the City's review or acknowledgement, are not intended to and shall not in any manner limit or qualify the liabilities and obligations assumed by Contractor under this Agreement.

The following insurance policies and coverages are required:

Commercial General Liability

Coverage must be afforded under a Commercial General Liability policy with limits not less than:

- \$1,000,000 each occurrence and \$2,000,000 aggregate for Bodily Injury, Property Damage, and Personal and Advertising Injury
- \$1,000,000 each occurrence and \$2,000,000 aggregate for Products and Completed Operations
- Policy must include coverage for contractual liability and independent contractors.

The City, a Florida municipality, its officials, employees, and volunteers are to be included as an additional insured with a CG 20 26 04 13 Additional Insured – Designated Person or Organization Endorsement or similar endorsement providing equal or broader Additional Insured Coverage with respect to liability arising out of activities performed by or on behalf of Contractor. The coverage shall contain no special limitation on the scope of protection afforded to the City, its officials, employees, and volunteers.

Business Automobile Liability

Coverage must be afforded for all Owned, Hired, Scheduled, and Non-Owned vehicles for Bodily Injury and Property Damage in an amount not less than \$1,000,000 combined single limit each accident.

If Contractor does not own vehicles, Contractor shall maintain coverage for Hired and Non-Owned Auto Liability, which may be satisfied by way of endorsement to the Commercial General Liability policy or separate Business Auto Liability policy.

Workers' Compensation and Employer's Liability

Coverage must be afforded per Chapter 440, Florida Statutes. Any person or entity performing work for or on behalf of the City must provide Workers' Compensation insurance. Exceptions and exemptions will be allowed by the City's Risk Manager, if they are in accordance with Florida Statute.

Contractor waives, and Contractor shall ensure that Contractor's insurance carrier waives, all subrogation rights against the City, its officials, employees, and volunteers for all losses or damages. The City requires the policy to be endorsed with WC 00 03 13 Waiver of our Right to Recover from Others or equivalent.

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

Insurance Certificate Requirements

- a) Contractor shall provide the City with valid Certificates of Insurance (binders are unacceptable) no later than ten (10) days prior to the start of work contemplated in this Agreement.
- b) Contractor shall provide to the City a Certificate of Insurance having a thirty (30) day notice of cancellation; ten (10) days' notice if cancellation is for nonpayment of premium.
- c) In the event that the insurer is unable to accommodate the cancellation notice requirement, it shall be the responsibility of Contractor to provide the proper notice. Such notification will be in writing by registered mail, return receipt requested, and addressed to the certificate holder.
- d) In the event the Agreement term or any surviving obligation of Contractor following expiration or early termination of the Agreement goes beyond the expiration date of the insurance policy, Contractor shall provide the City with an updated Certificate of Insurance no later than ten (10) days prior to the expiration of the insurance currently in effect. The City reserves the right to suspend the Agreement until this requirement is met.
- e) The Certificate of Insurance shall indicate whether coverage is provided under a claims-made or occurrence form. If any coverage is provided on a claims-made form, the Certificate of Insurance must show a retroactive date, which shall be the effective date of the initial contract or prior.
- f) The City shall be included as an Additional Insured on all liability policies, with the exception of Workers' Compensation.
- g) The City shall be granted a Waiver of Subrogation on Contractor's Workers' Compensation insurance policy.
- h) The title of the Agreement, Bid/Contract number, event dates, or other identifying reference must be listed on the Certificate of Insurance.

The Certificate Holder should read as follows:

City of Fort Lauderdale
401 SE 21st Street
Fort Lauderdale, FL 33316

Contractor has the sole responsibility for all insurance premiums and shall be fully and solely responsible for any costs or expenses as a result of a coverage deductible, co-insurance penalty, or self-insured retention; including any loss not covered because of the application of such deductible, co-insurance penalty, self-insured retention, or coverage exclusion or limitation. Any costs for adding the City as an Additional Insured shall be at Contractor's expense.

If Contractor's primary insurance policy/policies do not meet the minimum requirements as set forth in this Agreement, Contractor may provide evidence of an Umbrella/Excess insurance policy to comply with this requirement.

Contractor's insurance coverage shall be primary insurance in respect to the City's interests, a Florida municipality, its officials, employees, and volunteers. Any insurance or self-insurance maintained by the City shall be non-contributory.

Any exclusion or provision in any insurance policy maintained by Contractor that excludes coverage required in this Agreement shall be deemed unacceptable and shall be considered breach of contract.

All required insurance policies must be maintained until the Agreement work has been accepted by the City, or until this Agreement is terminated, whichever is later. Any lapse in coverage may be considered breach of contract. In addition, Contractor must provide to the City confirmation of coverage renewal via an updated certificate of insurance should any policies expire prior to the expiration of this Agreement. The City reserves the right to review, at any time, coverage forms and limits of Contractor's insurance policies.

Contractor shall provide notice of any and all claims, accidents, and any other occurrences associated with this Agreement to Contractor's insurance company or companies and the City's Risk Management office as soon as practical.

It is Contractor's responsibility to ensure that any and all of Contractor's independent contractors and subcontractors comply with these insurance requirements. All coverages for independent contractors and subcontractors shall be subject to all of the applicable requirements stated herein. Any and all deficiencies are the responsibility of Contractor. The City reserves the right to adjust insurance limits from time to time at its discretion with notice to Contractor.

NOTE: CITY PROJECT NUMBER, PROJECT NAME AND BID NUMBER MUST APPEAR ON EACH CERTIFICATE, AND THE CITY OF FORT LAUDERDALE MUST BE NAMED ON THE CERTIFICATE AS AN "ADDITIONAL INSURED" ON REQUIRED LIABILITY POLICIES.

A Sample Insurance Certificate shall be included with the bid 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.

- 11. PERFORMANCE AND PAYMENT BOND: N/A**
- 12. CITY PROJECT MANAGER**

The Project Manager is hereby designated by the City as Ana Ziegler whose address is 101 NE 3rd Avenue, Suite 2100, Fort Lauderdale 33301 telephone number: (954) 828-5817, and e-mail address is AZiegler@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 shall make payment to the Contractor through utilization of the City's P-Card Program. The City has implemented a Purchasing Card (P-Card) Program utilizing both the 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, Contractor 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. All costs associated with the Contractor's participation in this purchasing program shall be borne by the Contractor. The City reserves the right to revise this program as necessary.

Payment Card Industry (PCI) Compliance

Contractor agrees to comply with all applicable state, federal and international laws, as well as industry best practices, governing the collection, access, use, disclosure, safeguarding and destruction of Protected Information.

Contractor and/or any subcontractor that handles credit card data must be, and remain, PCI compliant under the current standards and will provide documentation confirming compliance upon request by the City of Fort Lauderdale, failure to produce documentation could result in termination of the contract.

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: \$100/hr.

CITY OF FORT LAUDERDALE
CONSTRUCTION AGREEMENT

THIS Agreement made and entered into this _____ day of _____, 2024, by and between the City of Fort Lauderdale, a Florida municipal corporation (“City”) and _____, a Florida company/corporation (“Contractor”), (“Party” or collectively “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 – Advertisement for Invitation to Bids, the Instructions to Bidders, the Bid Form (with supplemental affidavits and sample 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 written document executed by both Parties ordering a change in the Contract Price or Contract Time or a material change in the Work.
- 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, 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, 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 amount established in the bid submittal and award by the City’s City Commission, as may be amended by Change Order.
- 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 – 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.
- 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-workdays 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 condition’s precedent enumerated therein, within the time specified that the City will sign and deliver this Agreement.
- 1.23 Notice to Proceed – A written notice to Contractor authorizing the commencement of the activities identified in the notice or as described in the Contract Documents.
- 1.24 Plans - The official graphic representations of this Project that are a part of 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 construction project described in the Contract Documents, including the

Work described therein.

- 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 a Professional Engineer, or a Professional Land Surveyor licensed in the State of Florida and employed by the Contractor at no cost to the City.
- 1.31 Substantially Completed Date – A date when written notice is provided by the City to the Contractor stating that the Work is substantially completed. If, at the time of inspection, it is determined the project is substantially completed, the City will also issue a letter of Substantial Completion along with a punch list of incomplete or deficient items to be completed prior to requesting a Final Completion inspection.
- 1.32 Work – The construction and services required by the Contract Documents, whether completed or partially completed, and includes all labor, materials, equipment, and services provided or to be provided by Contractor to fulfill Contractor's obligations. The Work may constitute the whole or a part of the Project.

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:

GTL-WWTP PRE-TREATMENT BUILDING IMPROVEMENTS ITB 319 PROJECT P12170

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

PROJECT DESCRIPTION

Project is located at George T. Lohmeyer Regional (GTL) Waste Water Treatment Plant (WWTP) Pre-Treatment Building, in the City of Fort Lauderdale. The work to be accomplished under this contract includes, but is not limited to, the restoration of concrete spalling, encompassing tasks such as the removal and repair of unsound concrete, alongside cleaning

reinforcement where corrosion is below 20% and replacing it where corrosion exceeds this threshold. Areas targeted for rehabilitation include, but are not restricted to, essential structural elements like columns, beams, walls, and slabs. The methodology will adhere to industry standards to ensure structural integrity and longevity, while rigorous quality assurance measures will be implemented to verify the effectiveness of repairs.

- 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 all personnel employed. 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 Ana Ziegler, whose address is 101 NE 3rd Avenue Suite 2100, Fort Lauderdale 33301, telephone number: (954) 828-5817, and email address is Aziegler@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 incorporated herein and attached to this Agreement, and consist of the following:

- 4.1 This Agreement.
- 4.2 Exhibits to this Agreement: (Plans sheets [1] to [10] inclusive).
- 4.3 Public Construction Bond, Performance Bond, Payment Bond and Certificates of Insurance.
- 4.4 Notice of Award and Notice to Proceed.
- 4.5 General Conditions and Special Conditions.
- 4.6 Technical Specifications.
- 4.7 Plans/Drawings.
- 4.8 Addenda number _____ through _____, inclusive.
- 4.9 Bid Form and supplement Affidavits and Agreements.
- 4.10 All applicable provisions of State and Federal Law.
- 4.11 Invitation to Bid No. 319, Instructions to Bidders, and Bid Bond.

- 4.12 Contractor's response to the City's Invitation to Bid No.319, dated _____.
- 4.13 Schedule of Completion.
- 4.14 All amendments, modifications and supplements, change orders and work directive changes, issued on or after the Effective Date of the Agreement.
- 4.15 Any additional documents that are required to be submitted under the Agreement.
- 4.16 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.

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

- a. Approved change orders, addenda or amendments.
- b. Specifications and Drawings.
- c. Special Conditions.
- d. General Conditions.
- e. This Agreement dated _____, and any attachments.
- f. Invitation to Bid No. 319, and the specifications prepared by the City.
- g. Contractor's response to the City's Invitation to Bid No. 319, dated _____.
- h. Schedule of Values.
- i. 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, within five (5) calendar days, and before proceeding with the Work affected shall obtain a written interpretation or clarification from the City.

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 7 calendar days of the date of the Notice to Proceed.
- 5.2 The Work shall be Substantially Completed within 180 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 200 calendar days after 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 items 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 for 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 (1st) and the tenth (10th) 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-five percent (95%) 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 five percent (5%) 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 (2023), as amended or revised, provided, however, complete and error free pay application is submitted.
- 7.7 The City shall make payment to the Contractor through utilization of the City's Purchasing Card (P-Card) Program. The City has implemented a P-Card Program utilizing the MASTERCARD and VISA networks. Purchases from this contract will be made utilizing the City's P-Card. Contractor will receive payment from the purchasing card in the same manner as other credit card purchases. Accordingly, Contractor 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. All costs associated with the Contractor's participation in this purchasing program shall be borne by the Contractor. The City reserves the right to revise this program as necessary.
- 7.8 Payment Card Industry (PCI) Compliance Contractor agrees to comply with all applicable state, federal and international laws, as well as industry best practices, governing the collection, access, use, disclosure, safeguarding and destruction of Protected Information.

Contractor and/or any subcontractor that handles credit card data must be, and remain, PCI compliant under the current standards and will provide documentation confirming compliance upon request by the City of Fort Lauderdale. Failure to produce documentation could result in termination of the contract.

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, water table condition, moisture conditions and all year-round local weather and climate conditions (past and present), and 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 within the Contract Time as defined in this Agreement.

Furthermore, Contractor warrants and confirms that it 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 on its own, 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 Bid Price and that the Project can be completed for the Bid 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 it 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 it 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 Agreement in accordance with Article 17.

8.8.4 Where required and necessary, the Contractor shall, at all times, have a certified "competent person" assigned to the job site. The Contractor shall assign personnel to the job site that have successfully completed training programs related to trench safety, confined space work, and maintenance of traffic (MOT). Personnel certified by the International Municipal Signal Associations with Florida Department of Transportation qualifications are required relative to MOT. Any other certifications that may be required by applicable permitting agencies for the Work shall also be complied with by the Contractor. Failure to pursue the Work with the properly certified supervisory staff may result in notice to stop work or terminate the Agreement 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 materials 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 8 a.m. and 5:00 p.m., Monday through Friday.

Unless approved by the City in advance, the Contractor will not perform 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. For any overtime inspection required by City personnel, 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., Monday through Friday, and any work requiring inspection oversight being performed outside of this timeframe shall be paid for by the Contractor as Inspector overtime at a rate of \$100.00 per hour.** 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 itself to indemnify and hold 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 bids. 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 in conflict, the Contractor shall give the Project Manager prompt written notice thereof within five (5) calendar days, 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, standards, specifications and regulations, and without such notice to the Project Manager, the Contractor shall bear all costs arising therefrom.

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, and the 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 its work in such a manner as to avoid damage to adjacent private or public property. Any damage to existing structures of 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 properties and areas 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 accumulation 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.
- 8.16.6 Coordination with and scheduling of all required inspections from all permitting agencies.

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 entities 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. Section 9607, as amended or revised, 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 it 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 purpose, such acts or circumstances shall include, but not be limited to weather conditions affecting performance, floods, epidemics, pandemics, war, act of Governmental Authority, state of emergency, 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 ninety-six (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 it, the sub-recipient or its subcontractors shall not discriminate on the basis of race, color, national origin, or sex in the performance of this Agreement. 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 Agreement, which may result in the termination of this Agreement 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 shall provide public rights-of-way and easement, where available, for the installation of conduits, transformers pads and related appurtenances only.
- 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.

- 9.5 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 Agreement into a subsequent fiscal period is subject to appropriation of funds, unless otherwise authorized by law.

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: 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 (2022), 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.

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.

- 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: As a condition precedent to the effectiveness of this Agreement, during the term of this Agreement and during any renewal or extension term of this Agreement, Contractor shall cause at its sole expense, to provide insurance of such types and with such terms and limits as noted below. Providing proof of and maintaining adequate insurance coverage are material obligations of Contractor. Contractor shall provide the City a certificate of insurance evidencing such coverage. Contractor’s insurance coverage shall be primary insurance for all applicable

policies, in respect to the City's interests. The limits of coverage under each policy maintained by Contractor shall not be interpreted as limiting Contractor's liability and obligations under this Agreement. All insurance policies shall be through insurers authorized or eligible to write policies in the State of Florida and possess an A.M. Best rating of A-, VII or better, subject to approval by the City's Risk Manager.

The coverages, limits, and/or endorsements required herein protect the interests of the City, and these coverages, limits, and/or endorsements shall in no way be relied upon by Contractor for assessing the extent or determining appropriate types and limits of coverage to protect Contractor against any loss exposures, whether as a result of this Agreement or otherwise. The requirements contained herein, as well as the City's review or acknowledgement, are not intended to and shall not in any manner limit or qualify the liabilities and obligations assumed by Contractor under this Agreement.

The following insurance policies and coverages are required:

Commercial General Liability

Coverage must be afforded under a Commercial General Liability policy with limits not less than:

- \$1,000,000 each occurrence and \$2,000,000 aggregate for Bodily Injury, Property Damage, and Personal and Advertising Injury
- \$1,000,000 each occurrence and \$2,000,000 aggregate for Products and Completed Operations
- Policy must include coverage for contractual liability and independent contractors.

The City, a Florida municipality, its officials, employees, and volunteers are to be included as an additional insured with a CG 20 26 04 13 Additional Insured – Designated Person or Organization Endorsement or similar endorsement providing equal or broader Additional Insured Coverage with respect to liability arising out of activities performed by or on behalf of Contractor. The coverage shall contain no special limitation on the scope of protection afforded to the City, its officials, employees, and volunteers.

Business Automobile Liability

Coverage must be afforded for all Owned, Hired, Scheduled, and Non-Owned vehicles for Bodily Injury and Property Damage in an amount not less than \$1,000,000 combined single limit each accident.

If Contractor does not own vehicles, Contractor shall maintain coverage for Hired and Non-Owned Auto Liability, which may be satisfied by way of endorsement to the Commercial General Liability policy or separate Business Auto Liability policy.

Workers' Compensation and Employer's Liability

Coverage must be afforded per Chapter 440, Florida Statutes. Any person or entity performing work for or on behalf of the City must provide Workers' Compensation insurance. Exceptions and exemptions will be allowed by the City's Risk Manager, if they are in accordance with Florida Statute.

Contractor waives, and Contractor shall ensure that Contractor's insurance carrier waives, all subrogation rights against the City, its officials, employees, and volunteers for all losses or damages. The City requires the policy to be endorsed with WC 00 03 13 Waiver of our Right to Recover from Others or equivalent.

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

Insurance Certificate Requirements

- i) Contractor shall provide the City with valid Certificates of Insurance (binders are unacceptable) no later than ten (10) days prior to the start of work contemplated in this Agreement.
- j) Contractor shall provide to the City a Certificate of Insurance having a thirty (30) day notice of cancellation; ten (10) days' notice if cancellation is for nonpayment of premium.
- k) In the event that the insurer is unable to accommodate the cancellation notice requirement, it shall be the responsibility of Contractor to provide the proper notice. Such notification will be in writing by registered mail, return receipt requested, and addressed to the certificate holder.
- l) In the event the Agreement term or any surviving obligation of Contractor following expiration or early termination of the Agreement goes beyond the expiration date of the insurance policy, Contractor shall provide the City with an updated Certificate of Insurance no later than ten (10) days prior to the expiration of the insurance currently in effect. The City reserves the right to suspend the Agreement until this requirement is met.
- m) The Certificate of Insurance shall indicate whether coverage is provided under a claims-made or occurrence form. If any coverage is provided on a claims-made form, the Certificate of Insurance must show a retroactive date, which shall be the effective date of the initial contract or prior.
- n) The City shall be included as an Additional Insured on all liability policies, with the exception of Workers' Compensation.
- o) The City shall be granted a Waiver of Subrogation on Contractor's Workers' Compensation insurance policy.
- p) The title of the Agreement, Bid/Contract number, event dates, or other identifying reference must be listed on the Certificate of Insurance.

The Certificate Holder should read as follows:

City of Fort Lauderdale
401 SE 21st Street
Fort Lauderdale, FL 33316

Contractor has the sole responsibility for all insurance premiums and shall be fully and solely responsible for any costs or expenses as a result of a coverage deductible, co-insurance penalty, or self-insured retention; including any loss not covered because of the application of such deductible, co-insurance penalty, self-insured retention, or coverage exclusion or limitation. Any costs for adding the City as an Additional Insured shall be at Contractor's expense.

If Contractor's primary insurance policy/policies do not meet the minimum requirements as set forth in this Agreement, Contractor may provide evidence of an Umbrella/Excess insurance policy to comply with this requirement.

Contractor's insurance coverage shall be primary insurance in respect to the City's interests, a Florida municipality, its officials, employees, and volunteers. Any insurance or self-insurance maintained by the City shall be non-contributory.

Any exclusion or provision in any insurance policy maintained by Contractor that excludes coverage required in this Agreement shall be deemed unacceptable and shall be considered breach of contract.

All required insurance policies must be maintained until the Agreement work has been accepted by the City, or until this Agreement is terminated, whichever is later. Any lapse in coverage may be considered breach of contract. In addition, Contractor must provide to the City confirmation of coverage renewal via an updated certificate of insurance should any policies expire prior to the expiration of this Agreement. The City reserves the right to review, at any time, coverage forms and limits of Contractor's insurance policies.

Contractor shall provide notice of any and all claims, accidents, and any other occurrences associated with this Agreement to Contractor's insurance company or companies and the City's Risk Management office as soon as practical.

It is Contractor's responsibility to ensure that any and all of Contractor's independent contractors and subcontractors comply with these insurance requirements. All coverages for independent contractors and subcontractors shall be subject to all of the applicable requirements stated herein. Any and all deficiencies are the responsibility of Contractor. The City reserves the right to adjust insurance limits from time to time at its discretion with notice to Contractor.

NOTE: CITY PROJECT NUMBER, PROJECT NAME AND BID NUMBER MUST APPEAR ON EACH CERTIFICATE, AND THE CITY OF FORT LAUDERDALE MUST BE NAMED ON THE CERTIFICATE AS AN "ADDITIONAL INSURED" ON REQUIRED LIABILITY POLICIES.

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 Project Manager 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 Paragraphs 11.2.1 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 it 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 Contract's 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, suppliers, employees or laborers; (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, 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 (2023), as may be amended or revised, 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 fully executed 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 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 an approved and fully executed 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.

ARTICLE 15 – CHANGE OF THE CONTRACT TIME

15.1 The Contract Time may only be changed by an approved and fully executed 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 therefore 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, pandemics, act of Governmental Authority, state of emergency, 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 Agreement, 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 (\$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 makes a general assignment for the benefit of creditors.
 - 17.2.2 If a trustee, receiver, custodian or agent of the Contractor is appointed under applicable law or under Agreement, 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.
 - 17.2.3 If Contractor fails to begin the Work within fifteen (15) calendar days after the date set forth in the Notice to Proceed, 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.
 - 17.2.4 If the Contractor repeatedly fails to make prompt payments to subcontractors or for labor, material or equipment.
 - 17.2.5 If the Contractor repeatedly disregards proper safety procedures.
 - 17.2.6 If the Contractor disregards any local, state or federal laws or regulations.
 - 17.2.7 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 notice 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 below in Section 17.5.

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 Contractor 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 Contractor 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 Contractor 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 Agreement 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 accepted by the City and costs reasonably incurred by Contractor relating to commitments which had become firm prior to the termination. No payment shall be made for profit for work/services which have not been performed or accepted.

17.6 Where the Contractor's service has 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

City of Fort Lauderdale
401 SE 21st Street
Fort Lauderdale, FL 33316

City of Fort Lauderdale
1 East Broward Blvd, Suite 1605
Fort Lauderdale, FL 33301-1016

To the Contractor:

Telephone: _____
E-mail: _____

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 (2023), as may be amended or revised, or to extend the City's liability beyond the limits established in said Section 768.28, Florida Statutes (2023), as may be amended or revised; 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; WAIVER OF JURY TRIAL

- 21.1 The Agreement shall be interpreted and construed in accordance with, and governed by, the laws of the state of Florida. The Parties agree that the exclusive venue for any

lawsuit arising from, related to, or in connection with this Agreement shall be in the state courts of the Seventeenth Judicial Circuit in and for Broward County, Florida. If any claims arising from, related to, or in connection with this Agreement must be litigated in federal court, the Parties agree that the exclusive venue for any such lawsuit shall be in the United States District Court or United States Bankruptcy Court for the Southern District of Florida. **BY ENTERING INTO THIS AGREEMENT, THE PARTIES HEREBY EXPRESSLY WAIVE ANY AND ALL RIGHTS EITHER PARTY MIGHT HAVE TO A TRIAL BY JURY OF ANY ISSUES RELATED TO THIS AGREEMENT. IF A PARTY FAILS TO WITHDRAW A REQUEST FOR A JURY TRIAL IN A LAWSUIT ARISING OUT OF THIS AGREEMENT AFTER WRITTEN NOTICE BY THE OTHER PARTY OF VIOLATION OF THIS SECTION, THE PARTY MAKING THE REQUEST FOR JURY TRIAL SHALL BE LIABLE FOR THE REASONABLE ATTORNEYS' FEES AND COSTS OF THE OTHER PARTY IN CONTESTING THE REQUEST FOR JURY TRIAL, AND SUCH AMOUNTS SHALL BE AWARDED BY THE COURT IN ADJUDICATING THE MOTION.**

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 as independent contractor 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

The Contractor certifies that it is not on the Scrutinized Companies that Boycott Israel List created pursuant to Section 215.4725, Florida Statutes (2023), and that it is not engaged in a boycott of Israel. 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 (2023), as may be amended or revised, or been placed on the Scrutinized Companies that Boycott Israel List created pursuant to Section 215.4725, Florida Statutes (2023), as may be amended or revised, or is engaged in a boycott of Israel.

22.8 Public Entity Crimes: In accordance with the Public Crimes Act, Section 287.133, Florida Statutes (2023), as may be amended or revised, 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 (2023), as may be amended or revised, 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 Contractor 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 (2023), TO THE CONTRACTOR'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS AGREEMENT, CONTACT THE CUSTODIAN OF PUBLIC RECORDS AT PRRCONTRACT@FORTLAUDERDALE.GOV, 954-828-5002, CITY CLERK'S OFFICE, 1 EAST BROWARD BOULEVARD, SUITE 444 FORT LAUDERDALE, FLORIDA 33301.

Contractor shall:

1. Keep and maintain public records 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 (2023), 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 Agreement if the Contractor does not transfer the records to the City.
4. Upon completion of the Agreement, 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 Agreement, 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 Agreement, 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.

22.11 Non-Discrimination

The Contractor shall not discriminate against its employees based on the employee's race, color, religion, gender, gender identity, gender expression, marital status, sexual orientation, national origin, age, disability, or any other protected classification as defined by applicable law.

1. The Contractor certifies and represents that the Contractor offers the same health benefits to the domestic partners of its employees as are offered its employees' spouses or offers its employees the cash equivalent of such health benefits because it is unable to provide health benefits to its employees' domestic partners, and that the Contractor will comply with Section 2-187, Code of Ordinances of the City of Fort Lauderdale, Florida, as may be amended or revised, ("Section 2-187"), during the entire term of this Agreement.
2. The failure of the Contractor to comply with Section 2-187 shall be deemed to be a material breach of this Agreement, entitling the City to pursue any remedy stated below or any remedy provided under applicable law.
3. The City may terminate this Agreement if the Contractor fails to comply with Section 2-187.
4. The City may retain all monies due or to become due until the Contractor complies with Section 2-187.

5. The Contractor may be subject to debarment or suspension proceedings. Such proceedings will be consistent with the procedures in Section 2-183 of the Code of Ordinances of the City of Fort Lauderdale, Florida.

22.12 E-Verify

As a condition precedent to the effectiveness of this Agreement, pursuant to Section 448.095, Florida Statutes (2023), as may be amended or revised, the Contractor and its subcontractors shall register with and use the E-Verify system to electronically verify the employment eligibility of newly hired employees.

1. The Contractor shall require each of its subcontractors, if any, to provide the Contractor with an affidavit stating that the subcontractor does not employ, contract with, or subcontract with an unauthorized alien. The Contractor shall maintain a copy of the subcontractor's affidavit for the duration of this Agreement and in accordance with the public records requirements of this Agreement.

2. The City, the Contractor, or any subcontractor who has a good faith belief that a person or entity with which it is contracting has knowingly violated Subsection 448.09(1), Florida Statutes (2023), as may be amended or revised, shall terminate the contract with the person or entity.

3. The City, upon good faith belief that a subcontractor knowingly violated the provisions of Subsection 448.095(5), Florida Statutes (2023), as may be amended or revised, but that the Contractor otherwise complied with Subsection 448.095(5), Florida Statutes (2023), as may be amended or revised, shall promptly notify Contractor and order the Contractor to immediately terminate the contract with the subcontractor, and the Contractor shall comply with such order.

4. A contract terminated under Subparagraph 448.095(5)(c)1. or 2., Florida Statutes (2023), as may be amended or revised, is not a breach of contract and may not be considered as such. If the City terminates this contract under Paragraph 448.095(5)(c), Florida Statutes (2023), as may be amended or revised, the Contractor may not be awarded a public contract for at least one year after the date on which the contract was terminated. The Contractor is liable for any additional costs incurred by the City as a result of termination of this Agreement.

5. Contractor shall include in each of its subcontracts, if any, the requirements set forth in this Section, including this subparagraph, requiring any and all subcontractors, as defined in Subsection 448.095(1)(e), Florida Statutes (2023), as may be amended or revised, to include all of the requirements of this Section in their subcontracts. Contractor shall be responsible for compliance by any and all subcontractors, as defined in Subsection 448.095(1)(e), Florida Statutes (2023), as may be amended or revised, with the requirements of Section 448.095, Florida Statutes (2023), as may be amended or revised.

[THIS SPACE WAS INTENTIONALLY LEFT BLANK]

CITY

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

CITY OF FORT LAUDERDALE, a Florida municipal corporation

By: _____
SUSAN GRANT
Acting City Manager

Date: _____

ATTEST:

By: _____
DAVID R. SOLOMAN
City Clerk

Approved as to Legal Form and correctness:
Thomas J. Ansbro, City Attorney

By: _____

Assistant City Attorney

CONTRACTOR

WITNESSES:

CONTRACTOR.,
a Florida company/corporation.

By: _____

Print Name: _____

Print Name

Title: _____

ATTEST:

Print Name

By: _____

Secretary

(CORPORATE SEAL)

STATE OF _____:

COUNTY OF _____:

The foregoing instrument was acknowledged before me by means of physical presence or online notarization, this _____ day of _____, 2024, by _____, (NAME OF AUTHORIZED OFFICER) as _____ (TITLE OF AUTHORIZED OFFICER), for _____ (NAME OF COMPANY), a Florida _____ (TYPE OF COMPANY).

(Signature of Notary Public - State of Florida)

(Print, Type, or Stamp Commissioned Name of Notary Public)

Personally Known _____ OR Produced Identification _____
Type of Identification Produced: _____

CITY OF FORT LAUDERDALE



GTL WWTP-PRE-TREATMENT BUILDING REPAIRS ASSESSMENT FORT LAUDERDALE, FLORIDA PROJECT ID#: P12170 R.J. BEHAR & COMPANY, INC.

TECHNICAL SPECIFICATIONS TABLE OF CONTENTS

<u>Section</u>	<u>Description</u>	<u>Pages</u>
DIVISION 1 – GENERAL REQUIREMENTS		
01010	Summary of Work	2
01015	Definitions & Standards	3
01020	Measurement and Payment	4
01045	Cutting & Patching.....	4
01065	Permits & Fees	1
01071	Standard Reference.....	9
01200	Project Meetings & Reports	3
01300	Submittals.....	8
01310	Construction Progress Schedules.....	6
01320	Construction Video & Photographs	2
01410	Testing & Quality Control	3
01530	Temporary Barriers & Controls	4
01600	Material and Equipment	5
01630	Product Options & Substitutions	2
01700	Contract Closeout	4
 DIVISION 2 - SITE CONSTRUCTION		
02050	Demolition	3
02215	Protection of Existing Structures	4
 DIVISION 3 – CONCRETE		
03100	Concrete Formwork and Accessories.....	12
03200	Concrete Reinforcement	5
03300	Cast in Place Concrete	22
03312	Self Consolidating Concrete (SCC)	26
03350	Concrete Finishes	2
03600	Grout.....	10
03730	Concrete Restoration	11
 DIVISION 6 – WOODS		
06100	Rough Carpentry.....	4
 DIVISION 9 – FINISHES		
09900	Protective Coating	17

SECTION 01010 SUMMARY OF WORK

PART 1 - GENERAL

1.01 SCOPE:

- A. Summary of Work: This SECTION summarizes the WORK of the Project as covered in detail in the complete Contract Documents. This is a general summary and is not intended to be complete and all inclusive of the required WORK items.

1.02 SUBMITTALS:

- A. Submittals shall be in accordance with SECTION 01300.

1.03 PROJECT DESCRIPTION:

- A. Description of Project: George T. Lohmeyer Wastewater Treatment Plant – Deep Injection well is located at 1211-1499 SE 21st ST, Fort Lauderdale, FL 33316. The project consists of the repairs of several structural elements as well as replacement of reinforcement if needed and repairs of delaminated concrete in the affected areas. The structure will also be treated with concrete protective coatings appropriate to the section location within the structure.

1.04 RELATED CONTRACT ACTIVITIES:

- A. The CONTRACTOR shall provide adequate disposal of demolition equipment and material.
- B. The CONTRACTOR shall obtain all necessary permits prior to commencing construction activities.
- C. The CONTRACTOR shall refer to all drawing notes.

1.05 WORK PERFORMED BY OTHERS:

- A. N/A

1.06 CONTRACTOR'S USE OF PREMISES:

- A. See General Terms & Conditions.
- B. During construction activities, the CONTRACTOR shall be responsible for maintaining all access roads in good condition, including grading and drainage. See the General Terms & Conditions.
- C. The Contractor shall repair all damage incurred as a result of construction activities such as but not limited to Structures, Sidewalks, Pavement, Landscaping, Fencing, Etc. No additional compensation will be given.

1.07 CITY'S USE OF PREMISES:

- A. Partial CITY Occupancy: The CITY reserves the right to occupy and to place and install equipment in areas of the Project, prior to Substantial Completion provided that such occupancy does not interfere with completion of the WORK. Such placing of equipment and partial occupancy shall not constitute acceptance of the WORK.

1.08 WORK SEQUENCE, COORDINATION ACTIVITIES AND SCHEDULED DATES:

- A. General: The CONTRACTOR shall coordinate its WORK with other adjacent contractors, landowners, and CITY activities, with specific attention to access and staging areas. Construction sequence shall be determined by CONTRACTOR subject to the following needs for continuous access and operation by others.

- B. Suggested Construction Sequence: The CONTRACTOR shall submit a construction schedule for CITY evaluation and approval.

1.09 LIST OF DRAWINGS:

A. Drawings:

1. **George T. Lohmeyer Wastewater Treatment Pre – Treatment Plant Plan Sheets ID.**

- | | | |
|------|----|--------------------------------|
| 1.1 | 1 | Cover |
| 1.2 | 2 | General Notes |
| 1.3 | 3 | Lower Level – Plan View |
| 1.4 | 4 | Intermediate Level – Plan View |
| 1.5 | 5 | Upper Level - Plan View |
| 1.6 | 6 | Concrete Repair – Type I |
| 1.7 | 7 | Concrete Repair – Type I |
| 1.8 | 8 | Concrete Repair – Type II |
| 1.9 | 9 | Concrete Repair – Type II |
| 1.10 | 10 | Concrete Repair – Type III |

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION

SECTION 01015 DEFINITIONS AND STANDARDS

PART 1 - GENERAL

1.01 SCOPE:

A. Definitions:

1. A substantial amount of the Technical Specification (specification) language constitutes definitions for terms found in other areas of the Contract Documents including the Drawings, which must be recognized as diagrammatic in nature and not completely descriptive of all requirements necessary.
2. Certain terms used in the Contract Documents are defined in the General Terms & Conditions. Definitions and explanations are not necessarily either complete or exclusive but are general for the WORK.
3. The term "CITY", as defined in the General Terms & Conditions and used in these specifications, is further defined as the City of Fort Lauderdale or City of Fort Lauderdale's authorized representative, which may include, but is not limited to, the Design Engineer, Project Manager or Construction Manager.

B. General Requirements: General requirements are the provisions or requirements of Division 1 SECTIONS which apply to the entire WORK of the Contract.

1.02 FORMAT AND SPECIFICATION EXPLANATIONS:

A. Format Explanation: The format of principal portions of these specifications can be described as follows, although other portions may not fully comply, and no particular significance will be attached to such compliance or noncompliance.

1. SECTIONS and DIVISIONS: For convenience, the basic unit of the specification text is a "SECTION", each unit of which is named and numbered. These are organized into related families of sections, and various families of sections are organized into "DIVISIONS", which are recognized as the present industry consensus on uniform organization and sequencing of specifications. The SECTION title is not intended to limit meaning or content of SECTION, nor to be fully descriptive of requirements specified therein, nor to be an integral part of the text.
2. SECTION Numbering: Used for identification and to facilitate cross-references in the Contract Documents. SECTIONS are placed in numeric sequence; however, the numbering is not sequential, and listing of SECTIONS in Table of Contents at the beginning of the Technical Specifications must be consulted to determine numbers and names of specification SECTIONS in these Contract Documents.
3. Page Numbering: Numbered independently for each SECTION. The SECTION number is shown with the page number at bottom of each page to facilitate location of the text.
4. Parts: Each SECTION of these specifications generally has been subdivided into three (3) basic parts for uniformity and convenience (Part 1 "General", Part 2 "Products", and Part 3 "Execution"). These parts do not limit the meaning of the text within. Some SECTIONS may not contain all three parts when not applicable or may contain more than three parts to add clarity to organization of the SECTION.
5. Imperative Language: Used generally in specifications. Except as otherwise indicated, requirements expressed imperatively are to be performed by the CONTRACTOR. For clarity of reading, at certain locations contrasting subjective

language is used to describe responsibilities which must be fulfilled by the CONTRACTOR or, when so noted, by others.

6. Specialists Assignments: In certain instances, specification text requires that specific work be assigned to specialists or expert entities who must be engaged for performance of those units of work. These must be recognized as special requirements over which the CONTRACTOR has no choice or option. These assignments must not be confused with, and are not intended to interfere with, normal application of regulations, union jurisdictions and similar conventions. Nevertheless, final responsibility for fulfillment of the entire set of requirements remains with the CONTRACTOR.
 7. Trades: Except as otherwise specified or indicated, the use of titles such as "carpentry" in specification text, implies neither that the work must be performed by an accredited or unionized tradesperson of corresponding generic name (such as "carpenter"), nor that the specified requirements apply exclusively to work by tradespersons of that corresponding generic name.
- B. Specification Content: Because of methods by which this Project specification has been produced, certain general characteristics of contents and conventions in use of language are explained as follows:
1. Specifying Methods: The techniques or methods of specifying requirements varies throughout the text, and may include "prescriptive", "compliance with standards", "performance", "proprietary", or a combination of these. The method used for specifying one unit of work has no bearing on requirements for another unit of work.
 2. Overlapping and Conflicting Requirements: Where compliance with two (2) or more industry standards or sets of requirements is specified and overlapping of those different standards or requirements establishes different or conflicting minimums or levels of quality, notify the "CITY" for a decision, as specified in the General Terms & Conditions.
 3. Abbreviations: Throughout the Contract Documents are abbreviations implying words and meanings which will be appropriately interpreted. Specific abbreviations have been established, principally for lengthy technical terminology, and in conjunction with coordination of specification requirements, with notations on the Drawings and in schedules. These are normally defined at first instance of use. Organizational and association names and titles of general standards are also abbreviated.

1.03 DRAWING SYMBOLS:

- A. Except as otherwise indicated, graphic symbols used on the Drawings are those symbols generally recognized in the construction industry for the purposes indicated. Refer instances of uncertainty to the CITY for clarification.

1.04 INDUSTRY STANDARDS - APPLICABILITY:

- A. Applicable standards of the construction industry have the same force and effect and are made a part of the Contract Documents by reference, as if copied directly into the Contract Documents, or as if published copies were bound herewith. Referenced standards referenced directly in the Contract Documents or by governing regulations have precedence over non-referenced standards which are recognized in industry for applicability to work.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION

SECTION 01020 MEASUREMENTS AND PAYMENT

PART 1 - GENERAL

1.01 SCOPE:

- A. Payment for the various items in the Schedule of Payment items, as further specified herein, shall include all compensation to be received by the CONTRACTOR for mobilizing, furnishing all tools, equipment, supplies, and manufactured articles, and for all labor, operations, taxes, materials, commissions, transportation and handling, bonds, permit fees, insurance, overhead and profit, and incidentals appurtenant to the items of Work being described, as necessary to complete the various items of the Work, all 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 payment for any loss or damages arising directly or indirectly from the Work.
- B. The CONTRACTOR's attention is called to the fact that quotations for the various items of Work are intended to establish a total price for completing the Work in its entirety. Should the CONTRACTOR feel that the cost for any item of Work has not been established by the Schedule of Payment items or this Section, it shall include the cost for that Work in some other applicable bid item, so that its proposal for the project does reflect its total price for completing the Work in its entirety.

1.02 SUBMITTALS:

- A. Informational:
 - 1. Schedule of Values.
 - 2. Application for Payment (Submit on OWNER's form).
 - 3. Final Application for Payment.
- B. Submittals shall be in accordance with Section 01300 entitled "Submittals" and the article titled "Payment Procedures" in the City of Fort Lauderdale Construction Agreement.

1.03 SCHEDULE OF VALUES:

- A. Prepare a schedule of values for the Work.
- B. Unit Price Work: Reflect unit price quantity and price breakdown from conformed Bid Form.
- 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.

1.04 APPLICATION FOR PAYMENT:

- 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 an 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 OWNER-selected equipment, if applicable, and allowances, as appropriate.
- D. 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:

- A. Weighing, measuring, and metering devices used to measure quantity of materials for 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 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.
- 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)

G. The CONTRACTOR shall include mobilization and demobilization in their bid price.

1.06 PAYMENT:

A. General:

1. Progress payments will be made monthly.
2. The date for CONTRACTOR's submission of monthly Application for Payment shall be established at the Preconstruction Conference.
3. The CONTRACTOR shall be solely and directly responsible to the CITY and operators of utilities, telephone, television, power, water, or sewer systems for any damage, injury, expense, loss, inconvenience, delay, suits, actions, or claims of any character brought because of any injuries or damage which may result from the construction operations under this Contract.
4. Neither the CITY nor its officers or agents shall be responsible to the CONTRACTOR for damages as a result of the CONTRACTOR's failure to protect utilities encountered in the Work.

1.07 NON-PAYMENT FOR REJECTED OR UNUSED PRODUCTS:

B. 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 CITY.
6. Material remaining on hand after completion of Work.
7. Mobilization and Demobilization

PART 2 - PRODUCTS (NOT APPLICABLE)

PART 3 - EXECUTION (NOT APPLICABLE)

END OF SECTION

SECTION 01045 CUTTING AND PATCHING

PART 1 - GENERAL

1.01 SCOPE:

- A. Summary of Work: "Cutting and patching" includes cutting into existing construction to provide for the installation or performance of other work and all subsequent fitting and patching required to restore surfaces to their original condition.
 - 1. Cutting and patching is performed for coordination of the WORK, to uncover work for access or inspection, to obtain samples for testing, to permit alterations to be performed or for other similar purposes.
 - 2. Cutting and patching performed during the manufacture of products, or during the initial fabrication, erection or installation processes is not considered to be "cutting and patching" under this SECTION. Drilling of holes to install fasteners and similar operations are also not considered to be "cutting and patching".
- B. Refer to other SECTIONS of these specifications and the Drawings for specific cutting and patching requirements and limitations applicable to individual units of WORK.
 - 1. Unless otherwise specified, requirements of this SECTION also apply to mechanical and electrical work.
- C. Related Work Specified Elsewhere:
 - 1. SECTION 01300 – Submittals
 - 2. SECTION 03100 - Concrete Formwork
 - 3. SECTION 03200 - Concrete Reinforcement
 - 4. SECTION 03300 - Cast in Place Concrete
 - 5. SECTION 03312 - Self-Consolidating Concrete (SCC)
 - 6. SECTION 03600 - Grout
 - 7. SECTION 03730 - Concrete Restoration

1.02 SUBMITTALS:

- A. Submittals shall be in accordance with SECTION 01300.
- B. Procedural Proposal for Cutting and Patching: Where prior approval of cutting and patching is required, submit proposed procedures for this WORK well in advance of the time the WORK will be performed and request approval to proceed. Include the following information, as applicable, in the submittal:
 - 1. Describe nature of the cutting and patching and how it is to be performed, indicating why cutting and patching cannot be avoided.
 - 2. Describe the anticipated results of the cutting and patching in terms of changes to existing work, including structural, operational, and visual changes as well as other significant elements.
 - 3. List products to be used and firms that will perform the cutting and patching.
 - 4. Give dates when the cutting and patching is expected to be performed.
 - 5. List utilities that will be disturbed or otherwise be affected by the cutting and patching, including those that will be relocated and those that will be out-of-service temporarily.

- a. Indicate how long utility service will be disrupted.
- 6. Where cutting and patching of structural work involves the addition of reinforcement, submit details and calculations, prepared by a Professional Engineer licensed in the State of Florida, to show how that reinforcement is integrated with the original structure to satisfy all applicable requirements.
- C. Approval by the CITY to proceed with cutting and patching work does not waive the CITY's right to later require complete removal and replacement of work found to be cut and patched in an unsatisfactory manner.

1.03 QUALITY ASSURANCE:

- A. Requirements for Structural Work: Do not cut and patch structural work in a manner that would result in a reduction of the load-carrying capacity or load-deflection ratio. Submit for approval a signed and sealed shop drawings of load-carrying capacity scaffolding to account for cut areas before beginning of the work.
- B. Operational and Safety Limitations: Do not cut and patch operational elements or safety related components in a manner that would result in a reduction of their capacity to perform in the manner intended, including energy performance, or that would result in increased maintenance, or decreased operational life or decreased safety.
- C. Visual Requirements: Do not cut and patch work exposed on the building's exterior or in its occupied spaces, in a manner that would, in the CITY's opinion, result in lessening the building's aesthetic qualities.
 - 1. Do not cut and patch work in a manner that would result in substantial visual evidence of cut and patch work.
 - 2. Remove and replace work judged by the CITY to be cut and patched in a visually unsatisfactory manner.
 - 3. Retain the original installer or fabricator if possible, or another recognized experienced and specialized firm for cutting and patching.

PART 2 - PRODUCTS

2.01 MATERIALS:

- A. General: Except as otherwise indicated, or as directed by the CITY, use materials for cutting and patching that are identical to the existing materials.
- B. If identical materials are not available or cannot be used, use materials that match existing adjacent surfaces to the fullest extent possible with regard to visual effect.
- C. Use materials for cutting and patching that will result in equal-or-better performance characteristics.

PART 3 - EXECUTION

3.01 INSPECTION:

- A. Before cutting, examine the surfaces to be cut and patched and the conditions under which the cutting and patching is to be performed. If unsafe or otherwise unsatisfactory conditions are encountered, take corrective action before proceeding with the cutting and patching.
- B. Coordinate layout of the cutting and patching and resolve potential conflicts before proceeding with the cutting and patching.

3.02 PREPARATION:

- A. Temporary Support: To prevent failure, provide temporary support of work to be cut.
- B. Protection: Protect other work during cutting and patching to prevent damage. Provide protection from adverse weather conditions for that part of the Project that may be exposed during cutting and patching operations.
 - 1. Avoid interference with use of adjacent facilities or interruption of free passage to adjacent facilities.
 - 2. Take precautions not to cut existing pipes, conduits, or ducts currently in service, but scheduled to be relocated until provisions have been made to by-pass them. Coordinate with the CITY.

3.03 PERFORMANCE:

- A. General: Employ skilled workmen to perform cutting and patching work.
- B. Cutting: Perform the cutting using methods that are least likely to damage work to be retained or adjoining work. Where possible, review proposed procedures with the original installer; comply with the original installer's recommendations.
 - 1. General: Use hand or small power tools designed for sawing or grinding, not hammering and chopping, where cutting is required. Use of gasoline-powered tools will not be permitted in enclosed spaces.
 - 2. Cut through concrete and masonry using a cutting machine such as a carborundum saw or core drill to insure a neat hole.
 - 3. Cut holes and slots neatly to size required with minimum disturbance of adjacent work.
 - 4. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
 - 5. Temporarily cover openings when not in use.
- C. By-pass utility services such as pipe and conduit, before cutting, where such utility services are shown or required to be removed, relocated or abandoned.
- D. Cut off conduit and pipe in walls or partitions to be removed. After by-pass and cutting, cap, valve or plug and seal tight the remaining portion of pipe and conduit to prevent entrance of moisture or other foreign matter.
- E. Patching: Patch with seams which are durable and as invisible as possible. Comply with specified tolerances for the WORK.
 - 1. Inspect and test patched areas to demonstrate the integrity of the WORK.
 - 2. Restore exposed finishes of patched areas and where necessary extend finish restoration into retained adjoining work in a manner which will eliminate evidence of patching and refinishing.
 - 3. Patch and repair floor and wall surfaces to provide an even surface of uniform color and appearance where removal of walls or partitions extends from one finished area into another finished area.
 - 4. If necessary to achieve uniform color and appearance, remove existing floor and wall coverings and replace with new materials.
 - 5. Extend the final paint coat over the entire unbroken surface containing the patch, after the patched area has received prime and base coats where the patch occurs in a smooth painted surface.

6. Patch, repair, or re-hang existing ceilings as necessary to provide an even plane surface of uniform appearance.

3.04 CLEANING:

- A. Thoroughly clean areas and spaces where work is performed or used as access to work. Remove completely all excess paint, mortar, oils, putty, and items of similar nature.
- B. Thoroughly clean piping, conduit, and similar features before painting or other finishing is applied.
- C. Restore damaged pipe covering to its original condition.

END OF SECTION

SECTION 01065 PERMITS AND FEES

PART 1 - GENERAL

1.01 SCOPE:

A. Summary of Work:

1. Unless otherwise specified, the CONTRACTOR shall obtain and pay for all permits and licenses related to the WORK as provided for in the General Terms & Conditions.
2. The CONTRACTOR will be issued copies of all permits obtained by the CITY OF FORT LAUDERDALE at the pre-construction conference. A copy of the permits shall be posted at the Site at all times during construction. The CONTRACTOR shall be responsible for familiarizing himself with the permits and shall abide by the permit conditions at all times. The WORK shall be conducted and shall result in construction of the improvements of the Project, in full accordance with the conditions of the permits granted for the Project.
3. The WORK shall be conducted and shall result in construction of the improvements of the Project, in full accordance with the conditions of the permits granted for the Project.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION

SECTION 01071 STANDARD REFERENCES

Wherever used in the project manual, the following abbreviations will have the meanings listed:

AA	Aluminum Association Incorporated 818 Connecticut Avenue, NW Washington, DC 20006
AABC	Associated Air Balance Council 1518 K Street NW Washington, DC 20005
AAMA	American Architectural Manufacturers Association 2700 River Road, Suite 118 Des Plaines, IL 60018
AASHTO	American Association of State Highway and Transportation Officials 444 North Capitol Street, NW, Suite 225 Washington, DC 20001
ABMA	American Bearing Manufacturers Association 2025 M Street, NW Suite 800 Washington, DC 20036
ACI	American Concrete Institute 38800 Country Club Drive Farmington Hills, MI, 48331
AEIC	Association of Edison Illuminating Companies 600 18 th Street N Birmingham, Al 35203
AFBMA	Anti-Friction Bearing Manufacturers Association
AGA	American Gas Association 400 N. Capital Street, NW Suite 450 Washington, DC 20001
AGMA	American Gear Manufacturer's Association 500 Montgomery Street, Suite 350 Alexandria, VA 22314
AHA	American Hardboard Association 1210 West Northwest Hwy Palatine, IL 60067
AISC	American Institute of Steel Construction One East Wacker Drive, suite 700 Chicago, IL 60601
AISI	American Iron and Steel Institute 1000 16th Street, NW Washington, DC 20036

AITC	American Institute of Timber Construction 333 West Hampden Avenue Englewood, CO 80110
ALSC	American Lumber Standards Committee P. O. Box 210 Germantown, MD 20874
AMCA	Air Movement and Control Association, Inc. 30 West University Drive Arlington Heights, IL 60004
ANSI	American National Standards Institute, Inc. 25 West 43 rd Street New York NY 10036
APA	American Plywood Association P.O. Box 11700 Tacoma, WA 98411
API	American Petroleum Institute 1220 L Street, NW Washington, DC 20005
AHRI	Air-Conditioning Heating and Refrigeration Institute 1814 North Fort Myer Drive Arlington, VA 22209
ASCE	American Society of Civil Engineers 345 East 47th Street New York, NY 10017
ASCII	American Standard Code for Information Interchange United States of America Standards Institute 10 East 40th Street New York, NY 10016
ASE	American Standard Safety Code for Elevators, Dumbwaiter and Escalators American National Standards Institute/ASME A17.1/CSA B44 1430 Broadway New York, NY 10018
ASHRAE	American Society of Heating, Refrigeration and Air Conditioning Engineers United Engineering Center 1791 Tullie Circle, N.E. Atlanta, GA 30329
ASME	American Society of Mechanical Engineers Three Park Avenue New York, NY 10016
ASTM	American Society for Testing and Materials 1916 Race Street Philadelphia, PA 19103

AWPA	American Wood Preservers Association P.O. Box 361784 Birmingham, AL 35236
AWPB	American Wood Preservers Bureau 7962 Conell Court P. O. Box 5283 Lorton, VA 22079
AWPI	American Wood Preservers Institute 1945 Old Gallows Road, Suite 150 Vienna, VA 22182
AWI	Architectural Woodwork Institute 46179 Westlake Drive, Suite 120 Potomac Falls, VA 20165
AWS	American Welding Society 550 NW Lejune Road Miami, FL 33126
AWWA	American Water Works Association 6666 West Quincy Avenue Denver, CO 80235
BHMA	Builders Hardware Manufacturers Association 355 Lexington Avenue, 17 th Floor New York, NY 10017
BOCA	Building Officials and Code Administrators 17926 Halstead Homewood, IL 60430
CBMA	Certified Ballast Manufacturers Association 2120 Keith Building Cleveland, OH 44115
CMAA	Crane Manufacturers Association of America (Formerly called: Overhead Electrical Crane Institute) (OECI) 8720 Reds Oak Boulevard, Suite 201 Charlotte, NC 28217
CRSI	Concrete Reinforcing Steel Institute 933 North Plum Grove Road Schaumburg, IL 60173
CSA	Canadian Standards Association 155 Queen Street, Suite 1300 Ottawa, Ontario, CA K1P6L1
DEMA	Diesel Engine Manufacturer's Association 122 East 42nd Street New York, NY 10017

DHI	Door Hardware Institute 14150 Newbrook Drive, Suite 200 Chantilly, VA 20151
DIS	Division of Industrial Safety California Department of Industrial Relations 2422 Arden Way Sacramento, CA 95825
EEI	Edison Electric Institute 701 Pennsylvania Avenue, NW Washington, DC 20004
EIA	Electronic Industries Alliance 2001 Eye Street, NW Washington, DC 20006
EJMA	Expansion Joint Manufacturer's Association 25 North Broadway Tarrytown, NY 10591
EPA	Environmental Protection Agency Region 4 Sam Nunn Atlanta Federal Center 61 Forsyth Street, SW Atlanta, GA 30303-3104
ESO Subarticle 5	Electrical Safety Order, California Administrative Code, Title 8, Chap. 4, Office of Procurement, Publications Section P. O. Box 20191 8141 Elder Creek Road Sacramento, CA 95820
FAC	Florida Administrative Code
FEDSPEC	Federal Specifications General Services Administration Specification and Consumer Information Distribution Branch Washington Navy Yard, Bldg. 197 Washington, DC 20407
FEDSTDS	Federal Standards (see FEDSPECS)
FM	Factory Mutual Research 1151 Boston-Providence Turnpike Norwood, MA 02062
GANNA	Glass Association of North America 800 SW Jackson Street, Suite 1500 Topeka, Kansas 66612
HEI	Heat Exchange Institute 1300 Summer Avenue Cleveland, OH 44115

HI	Hydraulic Institute 1230 Keith Building Cleveland, OH 44115
HPVA	Hardwood Plywood and Veneer Association 1825 Michael Faraday Drive Reston, VA 20190
IAPMO	International Association of Plumbing and Mechanical Officials 5001 E. Philadelphia Street Ontario, CA 91761
ICBO	International Conference of Building Officials 5360 South Workman Mill Road Whittier, CA 90601
ICEA	Insulated Cable Engineers Association P. O. Box P South Yarmouth, MA 02664
ICRI	International Concrete Repair Institute 10600 West Higgins Road, Suite 607 Rosemont, IL 60018
IEEE	Institute of Electrical and Electronics Engineers, Inc. 3 Park Avenue, 17 th Floor New York, NY 10016-5997
IES	Illuminating Engineering Society c/o United Engineering Center 120 Wall Street Floor 17 New York, NY 10005
ISA	Instrument Society of America 67 Alexander Drive Research triangle Park, NC 27709
ISO	International Organization for Standardization 1, ru de Varembe, Case Postale 56 CH-1211 Genna 20, Switzerland
JIC	Joint Industrial Council 7901 Westpark Drive McLean, VA 22101
MFMA	Metal Framing Manufacturers Association 401 Michigan Avenue Chicago, IL 60611
MILSPEC	Military Specifications Naval Publications and Forms Center 5801 Tabor Avenue Philadelphia, PA 19120

MSS	Manufacturers Standardization Society of the Valve and Fittings Industry, Inc. 127 Park Avenue, N.E. Vienna, VA 22180
NAAMM	National Association of Architectural Metal Manufacturers 800 Roosevelt rd bldg C, Suite 312 Glen Ellyn, IL 60137
NACE	National Association of Corrosion Engineers P. O. Box 986 Katy, TX 77450
NEC	National Electrical Code National Fire Protection Association 470 Atlantic Avenue Boston, MA 02210
NECA	National Electrical Contractors Association 3 Bethesda Metro Center, Suite 1100 Bethesda, MD 20814
NELMA	Northeastern Lumber Manufacturers Association, Inc. 272 Turtle Road P. O. Box 87A Cumberland Center, ME 04021
NEMA	National Electrical Manufacturer's Association 1300 N. 17 th Street, Suite 1752 Rosslyn, VA 22209
NESC	National Electric Safety Code American National Standards Institute 1430 Broadway New York, NY 10018
NETA	InterNational Electrical Testing Association 3050 Old Centre Avenue, Suite 102 Portage, MI 49024
NFP	National Forest Products Association (Formerly National Lumber Manufacturer's Association) 1619 Massachusetts Avenue Washington, DC 20036
NFPA	National Fire Protection Association Batterymarch Park Quincy, MA 02269
NHLA	National Hardwood Lumber Association P. O. Box 34518 Memphis, TN 38184-0518
NIST	National Institute of Standards and Technology 100 Bureau Drive, Suite 1070 Gaithersburg, MD 20899-1070

NSF	National Sanitation Foundation P.O. Box 130140 789 N. Dixoboro Road Ann Arbor, MI 48113
OSHA	Occupational Safety and Health Act U.S. Department of Labor Occupational and Health Administration San Francisco Regional Office 200 Constitution Avenue Washington, DC 20210
PCI	Prestressed Concrete Institute 200 W. Adams Street, Suite 2100 Chicago, IL 60606
PPIC	The Plumbing & Piping Industry Council, Inc. 135 Calle Catalina Place Houston, TX 77007
RIS	Redwood Inspection Service California Redwood Association 818 Grayson Road, Suite 201 Pleasant Hill, CA 94523
RLM	Reflector and Lamp Manufacturers Standard Institute
RMA	Rubber Manufacturers Association 1400 K Street Washington, DC 20005
SAE	Society of Automotive Engineers 400 Commonwealth Drive Warrendale, PA 15096
SBC	Standard Building Code Published by SBCCI
SMC	Standard Mechanical Code Published by SBCCI
SBCCI	Southern Building Code Congress International 1116 Brown-Marx Building Birmingham, AL 35203
SCMA	Southern Cypress Manufacturers Association 805 Sterick Bldg. Memphis, TN 38103

SDI	Steel Door Institute 30200 Detroit road Westlake, OH 44145
SMACNA	Sheet Metal and Air Conditioning Contractors National Association, Inc. 4201 Lafayette Center Drive Chantilly, VA 20151
SPC	Society for Protective Coatings 40 24 th Street, 6 th Floor Pittsburgh, PA 15222
SPI	Society of the Plastics Industry, Inc. 1667 K Street, NW Suite 1000 Washington, DC 20006
SPIB	Southern Pine Inspection Bureau P.O. Box 10915 Pensacola, FI 32524
SSPC	The Society for Protective Coatings (formerly called: Steel Structures Painting Council) 40 24 th Street, 6 th Floor Pittsburgh, PA 15222-4656
SSPWC	Standard Specifications for Public Works Construction Building News, Inc. 3055 Overland Avenue Los Angeles, CA 90034
TEMA	Tubular Exchanger Manufacturer's Association 3251 Corte Malpaso, Suite 507 Camarillo, CA 93012
UL	Underwriters Laboratories Inc. 2600 NW Lake Road Camas, WA 98607
USBR	Bureau of Reclamation U.S. Department of Interior Engineering and Research Center Denver Federal Center, Building 67 Denver, CO 80225
USACE	United States Army Corps of Engineers Jacksonville District P. O. Box 4970 Jacksonville, FL 32232-0019
WCLIB	West Coast Lumber Inspection Bureau 6980 SW Varns Street P. O. Box 23145 Tigard, OR 97223

WWPA

Western Wood Products Association
(Formerly called: West Coast Lumbermen's Association (WCLA))
522 SW 5th Avenue, Suite 500
Portland, OR 97204

END OF SECTION

SECTION 01200 PROJECT MEETINGS AND REPORTS

PART 1 - GENERAL

1.01 SCOPE

- A. Summary of Work: This SECTION includes the following administrative and procedural requirements:
 - 1. Project Meetings:
 - a. Preconstruction conference
 - b. Progress meetings
 - 2. Schedules and Reports:
 - a. Initial coordination submittals
 - b. Construction Schedules (See SECTION 01310)
 - c. Special reports
- B. Related Work Specified Elsewhere:
 - 1. SECTION 01300 – Submittals

1.02 SUBMITTALS:

- A. All submittals shall be made in accordance with SECTION 01300.

1.03 PROJECT MEETINGS:

- A. Pre-construction Conference
 - 1. The CITY OF FORT LAUDERDALE will administer a pre-construction conference within ten (10) days after the Effective Date of the Agreement, to review items stated in the following agenda and to establish a working understanding between the parties as to their relationships during conduct of the WORK.
 - 2. The Preconstruction conference shall be attended by:
 - a. The CONTRACTOR and his Project Superintendent
 - b. Representatives of principal Subcontractors and Suppliers
 - c. Engineer and his Resident Project Representative if any
 - d. The CITY or its representative
 - e. Other affected parties determined by the CITY OF FORT LAUDERDALE
 - 3. Agenda:
 - a. Projected Construction Schedules
 - b. Critical Work sequencing
 - c. Designation of responsible personnel
 - d. Project coordination
 - e. Procedures and Processing of:
 - i. Field decisions
 - ii. Substitutions

- iii. Submittals
- iv. Change Orders
- v. Applications for payment
- f. Procedures for testing
- g. Procedures for maintaining record documents
- h. Use of Premises:
 - i. Office, work and storage areas
 - ii. The CITY OF FORT LAUDERDALE's requirements
- i. Construction facilities, controls, and construction aids
- j. Temporary utilities
- k. Safety and first aid
- l. Security
- m. Requirements of any permits obtained by the CITY OF FORT LAUDERDALE and/or the CONTRACTOR

4. Location of Meeting: ONSITE

B. Progress Meetings:

1. The CITY OF FORT LAUDERDALE OR IT REPRESENTATIVE will administer a progress meeting a minimum of One BI-WEEKLY (every 2 WEEK) and at other times requested by the CITY. The CONTRACTOR, Engineer, and all Subcontractors active on the Site shall be represented at each meeting. The CONTRACTOR may request attendance by representatives of his Suppliers and other Subcontractors, or other entities concerned with the Project or involved with the planning, coordination, or performance of future Project activities. All participants in the meeting shall be familiar with the Project and authorized to conclude matters relating to the WORK.
2. The CONTRACTOR and each Subcontractor shall be prepared to report on and discuss the current construction progress, any anticipated future changes to the Construction Schedule, and advise if their current progress, and anticipated future schedules are compatible with the WORK.
3. If one Subcontractor is delaying another, the CONTRACTOR shall direct such changes as are necessary for those involved to mutually agree on the Construction Schedule changes in the best interest of construction progress.
4. Agenda
 - a. Review of construction progress since previous meeting
 - b. Field observations, interface requirements, conflicts
 - c. Issues which may impede the Construction Schedule
 - d. Off-site fabrication
 - e. Delivery schedules
 - f. Submittal schedules and status
 - g. Site utilization
 - h. Temporary facilities and services
 - i. Hours of Work

- j. Hazards and risks
 - k. Housekeeping
 - l. Quality and Work standards
 - m. Change orders
 - n. Documentation of information for payment request
 - o. Corrective measures and procedures to regain projected schedule, if necessary
 - p. Revisions to the Construction Schedule
 - q. Progress and schedule during the succeeding WORK period
 - r. Review proposed changes for:
 - i. Effect on the Construction Schedule and on the Completion Date
 - ii. Effect on the other contracts of the Project
 - s. Other business
5. Location of Meetings: ONSITE
6. Reporting: After each meeting, minutes of the meeting will be distributed by the CITY to each party present and to parties who should have been present.
- C. Special Reports:
- 1. When an event of an unusual and/or significant nature occurs at the Site, a special report shall be prepared and submitted by the CONTRACTOR to the CITY. List the chain of events, persons participating, and the response by CONTRACTOR's personnel, an evaluation of the results or effects, and similar pertinent information.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION

SECTION 01300 SUBMITTALS

PART 1 - GENERAL

1.01 SCOPE:

- A. This SECTION includes definitions, descriptions, transmittal, and review of "Compliance" and "Miscellaneous" Submittals.
- B. Related Work Specified Elsewhere:

1.02 GENERAL INFORMATION:

A. Definitions:

1. Compliance Submittals include Shop Drawings, product data, and samples which are prepared by the CONTRACTOR, Subcontractor, MANUFACTURER, or Supplier and submitted by the CONTRACTOR to the ENGINEER as a basis for approval of the use of Equipment and Materials proposed for incorporation in the WORK or needed to describe installation, operation, maintenance, or technical properties.
 - a. Shop Drawings include custom-prepared data of all types including drawings, diagrams, performance curves, material schedules, templates, instructions, and similar information not in standard printed form applicable to other projects.
 - b. Product data includes standard printed information on materials, products and systems not custom-prepared for this Project, other than the designation of selections from available choices.
 - c. Samples include both fabricated and unfabricated physical examples of materials, products, and WORK; both as complete units and as smaller portions of units of WORK; either for limited visual inspection or (where indicated) for more detailed testing and analysis. Mock-ups are a special form of samples which are too large to be handled in the specified manner for transmittal of sample Submittals.
2. Miscellaneous Submittals are those technical reports, administrative Submittals, certificates, and warranties not defined as Shop Drawings, product data, or samples.
 - a. Technical reports include laboratory reports, tests, technical procedures, technical records, CONTRACTOR's design analysis and CONTRACTOR's survey field notes for construction staking, before cross-sections and after cross-sections, and similar type Submittals.
 - b. Administrative Submittals are those nontechnical Submittals required by the Contract Documents or deemed necessary for administrative records. These Submittals include maintenance agreements, workmanship bonds, Project photographs, physical work records, statements of applicability, and copies of industry standards, as-constructed data, security/protection/safety data, and similar type Submittals.
 - c. Certificates and warranties are those Submittals on Equipment and Materials where a written certificate or guarantee from the MANUFACTURER or Supplier is called for in the Specifications.
 - d. Reports as required by Contract describing CONTRACTOR's means and methods for items such as dewatering, earth and water retaining, erosion/turbidity control, safety plans, and similar type Submittals.

B. Quality Requirements:

1. Submittals such as Shop Drawings and product data shall be of the quality for legibility and reproduction purposes. Every line, character, and letter shall be clearly legible.

Drawings such as reproducibles shall be useable for further reproduction to yield legible hard copy.

2. Documents submitted to the ENGINEER that do not conform to these requirements shall be subject to rejection by the ENGINEER, and upon request by ENGINEER, CONTRACTOR shall resubmit conforming documents. If conforming Submittals cannot be obtained, such documents shall be retraced, redrawn, or photographically restored as may be necessary to meet such requirements. CONTRACTOR's (or his Subcontractor's) failure to initially satisfy the legibility quality requirements will not relieve CONTRACTOR (or his Subcontractors) from meeting the required schedule for Submittal of Shop Drawings and product data.
- C. Language and Dimensions:
1. All words and dimensional units shall be in the English language.
 2. Metric dimensional unit equivalents may be stated in addition to the English units.
- D. Submittal Completeness:
1. Submittals shall be complete with respect to dimensions, design criteria, materials of construction, and other information specified to enable the ENGINEER to review the information effectively.
 2. Where standard drawings are furnished which cover a number of variations of the general class of equipment, each such drawing shall be individually annotated to describe exactly which parts of the drawing apply to the equipment being furnished. Use hatch marks to indicate variations that do not apply to the Submittal. The use of "highlighting" is not an acceptable means of annotating Submittals. Such annotation shall also include proper identification of the Submittal permanently attached to the drawing.
 3. Reproduction or copies of Drawings or portions thereof will not be accepted as complete fabrication or erection drawings. The CONTRACTOR may use a reproduction of the ENGINEER prepared Drawings for erection drawings such as to indicate information on erection or to identify detail drawing references. Where the Drawings are revised to show this additional CONTRACTOR information, the ENGINEER title block shall be replaced with a CONTRACTOR's title block and the ENGINEER professional seal shall be removed from the Drawing. The CONTRACTOR shall revise these erection drawings for subsequent revisions to the Drawings.

1.03 COMPLIANCE SUBMITTALS:

- A. Items shall include, but not be limited to, the following:
1. MANUFACTURER's specifications
 2. Catalogs, or parts thereof, of manufactured equipment
 3. Shop fabrication and erection drawings
 4. General outline drawings of equipment showing overall dimensions, location of major components, weights, and location of required building openings and floor plates
 5. Detailed equipment installation drawings, showing foundation details, anchor bolt sizes and locations, base plate sizes, location of CITY connections, and all clearances required for erection, operation, and disassembly for maintenance
 6. Schematic diagrams for electrical items, showing external connections, terminal block numbers, internal wiring diagrams, and one-line diagrams
 7. Bills of material and spare parts list

8. Instruction books and operating manuals
 9. Material lists or schedules
 10. Performance tests on equipment by MANUFACTURERS
 11. Concrete mix design information
 12. Samples and color charts
 13. All drawings, calculations, catalogs or parts thereof, MANUFACTURER's specifications and data, samples, instructions, and other information specified or necessary:
 - a. For ENGINEER to determine that the Equipment and Materials conform with the design concept and comply with the intent of the Contract Documents.
 - b. For the proper erection, installation, operation and maintenance of the Equipment and Materials which the ENGINEER will review for general content but not for substance.
 - c. For the ENGINEER to determine what supports, anchorages, structural details, connections, and services are required for the Equipment and Materials, and the effects on contiguous or related structures and Equipment and Materials.
- B. Compliance Submittal Action Stamps:
1. The ENGINEER review action stamp or designation, appropriately completed, will appear on all Compliance Submittals of CONTRACTOR when returned by the ENGINEER. Review status designations listed on ENGINEER action stamp are defined as follows:
 - a. "ACCEPTED AS SUBMITTED": Signifies Equipment or Material represented by the Submittal conforms to the design concept and complies with the intent of the Contract Documents and is acceptable for incorporation in the WORK. CONTRACTOR is to proceed with fabrication or procurement of the items and with related WORK.
 - b. "ACCEPTED AS NOTED": Signifies Equipment and Material represented by the Submittal conforms with the design concept and complies with the intent of the Contract Documents and is acceptable for incorporation in the WORK subject to the condition that as constructed it shall be in accordance with all notations and/or corrections indicated. CONTRACTOR is to proceed with fabrication or procurement of the items and with related WORK in accordance with ENGINEER notations.
 - c. "RETURNED FOR REVISION": Means that deviation from the requirements of the Contract Documents exist in the Submittal. CONTRACTOR is to resubmit revised information responsive to ENGINEER annotations on the returned Submittal or written in the letter of transmittal. Fabrication or procurement of items represented by the Submittal and related WORK is not to proceed until the Submittal is approved.
 - d. "NOT ACCEPTABLE (SUBMIT ANEW)": Signifies Equipment and Material represented by the Submittal does not conform to the design concept or comply with the intent of the Contract Documents and is disapproved for use in the WORK. CONTRACTOR is to resubmit Compliance Submittals responsive to the Contract Documents.
 - e. "PRELIMINARY SUBMITTAL": Signifies Submittals of such preliminary nature that a determination of conformance with the design concept or compliance with the intent of the Contract Documents must be deferred until additional information is furnished. CONTRACTOR is to submit such additional information to permit layout and related activities to proceed.
 - f. "FOR REFERENCE ONLY": Signifies Submittals which are for supplementary information only; pamphlets, general information sheets, catalog cuts, standard sheets, bulletins and similar data, all of which are useful to the CITY in design,

operation, or maintenance, but which by their nature do not constitute a basis for determining that items represented thereby conform with the design concept or comply with the intent of the Contract Documents. The ENGINEER reviews such Submittals for general content but not for substance.

- g. "DISTRIBUTION COPY (PREVIOUSLY ACCEPTED)": Signifies Submittals which have been previously accepted and are being distributed to CONTRACTOR, CITY, ENGINEER, Resident Project Representative, and others for coordination and construction purposes.

C. Schedule and Log of Compliance Submittals:

1. Prepare for the CITY, a schedule and log for submission of all Compliance Submittals specified or necessary for ENGINEER review of the use of Equipment and Materials proposed for incorporation in the WORK or needed for proper installation, operation or maintenance. Submit the schedule and log with the procurement schedule and WORK progress schedule. Schedule submission of all Compliance Submittals to permit review, fabrication, and delivery in time so as to not cause a delay in the WORK of CONTRACTOR or his Subcontractors or any other contractors as described herein.
2. In establishing schedule for Compliance Submittals, allow fifteen (15) working days in ENGINEER office for reviewing original Submittals and ten (10) working days for reviewing resubmittals.
3. The schedule shall indicate the anticipated dates of original submission and shall be prepared in accordance with SECTION 01310.
4. Schedule all Compliance Submittals required prior to fabrication or manufacture for submission within 30 days of the Notice to Proceed Schedule Compliance Submittals pertaining to storage, installation and operation at the Site for ENGINEER acceptance prior to delivery of the Equipment and Materials.
5. Resubmit Compliance Submittals the number of times required for ENGINEER "ACCEPTED AS SUBMITTED." However, any need for resubmittals more than the number set forth in the accepted schedule, or any other delay in obtaining acceptance of Submittals, will not be grounds for extension of the Contract Time, provided the ENGINEER completes its reviews within the times stated above.

D. Transmittal of Compliance Submittals:

1. All Compliance Submittals of Equipment and Materials furnished by Subcontractors, MANUFACTURERS, and Suppliers shall be submitted to the ENGINEER by CONTRACTOR in electronic PDF format as indicated below.
2. After checking and verifying all field measurements, transmit all Compliance Submittals to the ENGINEER for acceptance as follows:
 - a. Identify each Compliance Submittal by Submittal Number, Project name and number, Contract title and number, and the Specification SECTION and article number marked thereon or in the letter of transmittal. Unidentifiable Submittals will be returned for proper identification.
 - b. Check and stamp Compliance Submittals of Subcontractors, Suppliers, and MANUFACTURERS with CONTRACTOR's approval prior to transmitting them to the ENGINEER. CONTRACTOR's stamp of approval shall constitute a representation to the ENGINEER that CONTRACTOR has either determined and verified all quantities, dimensions, field construction criteria, materials, catalog numbers, and similar data, or he assumes full responsibility for doing so, and that he has coordinated each Compliance Submittal with the requirements of the WORK and the Contract Documents.

- c. At the time of each submission, call to the attention of ENGINEER in the letter of transmittal any deviations from the requirements of the Contract Documents.
 - d. Provide all Submittals in electronic format, compatible with Adobe Professional, Version 8 (or higher), and submitted as a single file, using PDF bookmarks and/or chapters to identify divisions within the Submittal package.
 - e. Submittals with file sizes greater than ten (10) megabyte (MB) shall be transferred to an approved file sharing system, coupled with an electronic notification to the CITY and ENGINEER of the transfer. The file sharing system, and associated password information, will be provided by the CITY Project Manager.
 - f. Make all modifications noted or indicated by ENGINEER and return revised copies, or samples until accepted. Revised Submittals must be complete and conformed, including all pages/sheets with the required revisions and any additional or replacement pages/sheets. Direct specific attention in writing, or on revised Submittals, to changes other than the modifications called for by the ENGINEER on previous Submittals. Subsequent review cycles for returned or revised Submittals shall replicate the process described in items d. through e. above.
 - g. If the ENGINEER review action is "ACCEPTED AS NOTED", the Submittal will be stamped as such, and electronically transmitted back to the CONTRACTOR. Upon receipt of this notification from the ENGINEER, The CONTRACTOR shall resubmit one (1) conformed electronic copy in PDF file format to the ENGINEER for final distribution. If the Submittal is required to be signed and sealed by a Professional Engineer registered in the State of Florida, it shall be signed and sealed at this time. Submittal will not be considered final until all copies have been received by the ENGINEER. Submittal will be stamped "DISTRIBUTION COPY (PREVIOUSLY ACCEPTED)" by the ENGINEER. Accepted Submittals transmitted for final distribution will not be further reviewed and are not to be revised. If errors are discovered during manufacture or fabrication, correct the Submittal and resubmit for review.
 - h. Following completion of the WORK and prior to final payment, furnish those drawings necessary to indicate "AS CONSTRUCTED" conditions, including field modifications. Furnish additional copies for insertion in equipment instruction books as required. All such copies shall be clearly marked "AS BUILT DRAWING."
 - i. WORK requiring a Compliance Submittal shall not be commenced or shipped until the Submittal has been stamped "ACCEPTED AS SUBMITTED" or "ACCEPTED AS NOTED" by the ENGINEER
 - j. Keep a legible copy or sample of each Compliance Submittal at the Site.
3. Copies of the equipment CONTRACTOR's erection drawings and other Compliance Submittals required for the installation of equipment furnished by others under separate Contract for installation under this Contract will be transmitted to CONTRACTOR by the CITY in the final distribution of such Submittals.
 4. Information to MANUFACTURER's City Office: MANUFACTURERS and Suppliers of Equipment and Materials shall furnish copies of all agreements, drawings, specifications, operating instructions, correspondence, and other matters associated with this Contract to the MANUFACTURER's City office servicing the CITY. Insofar as practicable, all business matters relative to Equipment and Materials included in this Contract shall be conducted through such local City offices.
- E. CITY OF FORT LAUDERDALE Review:
1. The CITY may review and return Compliance Submittals to CONTRACTOR with appropriate notations. Instruction books and similar Submittals will be reviewed by the CITY for general content but not for substance.

2. The CITY acceptance of Compliance Submittals will not relieve CONTRACTOR from his responsibility as stated in the General Terms and Conditions.

F. Instruction Books / Operation & Maintenance Manuals:

1. Equipment instruction books and manuals shall be prepared by the MANUFACTURER and shall include the following:
 - a. Index and tabs
 - b. Instructions for installation, start-up, operation, inspection, maintenance, parts lists and recommended spare parts, and data sheets showing model numbers
 - c. Applicable drawings
 - d. Name of contact person, phone number, and address of the nearest authorized service facility
 - e. Attached to the above shall be a notice of the exact warranty effective dates, beginning and ending.
 - f. All additional data specified
2. Information listed above shall be submitted electronically in a PDF file format.
 - a. Instruction Books/Operation & Maintenance Manuals shall contain the following:
 - i. Equipment name
 - ii. MANUFACTURER's name
 - iii. Project name
 - iv. Contract number
 - v. Reference to applicable Drawing No. & Technical Specifications Section
 - b. Format: The overall manual should be constructed around certain types of structures or equipment in the Project, and not merely assembled by technical specification section, so that all pertinent data needed by personnel to operate or maintain the equipment or structure is in one (1) manual (as far as is practical). The CONTRACTOR shall coordinate with the ENGINEER as to how the manuals are to be assembled (Bookmarked).

G. Samples:

1. Office samples shall be of sufficient size and quantity to clearly illustrate the following:
 - a. Functional characteristics of the product, with integrally related parts and attachment devices
 - b. Full range of color, texture, and pattern

1.04 MISCELLANEOUS SUBMITTALS:

- A. Miscellaneous Submittals are comprised of technical reports, administrative Submittals, and warranties which relate to the WORK, but do not require ENGINEER approval prior to proceeding with the WORK. Miscellaneous Submittals may include but are not limited to (at ENGINEER discretion):
1. Welder qualification tests
 2. Welding procedure qualification tests
 3. X-ray and radiographic reports
 4. Field test reports

5. Concrete cylinder test reports
 6. Certification on Materials:
 - a. Steel mill tests
 - b. Paint lab tests
 - c. Cement tests
 7. Soil test reports
 8. Temperature records
 9. Shipping or packing lists
 10. Job progress schedules
 11. Equipment and Material delivery schedules
 12. Progress photographs
 13. Warranties
 14. Fire protection and hydraulic calculations
 15. Surveying field notes, preliminary and final Surveyor's Reports
 16. Pump tests
 17. Traffic control plan
 18. Technical Reports
 19. Written Certificates and Warranties
- B. Transmittal of Miscellaneous Submittals:
1. All Miscellaneous Submittals furnished by Subcontractors, MANUFACTURERS, and Suppliers shall be submitted to ENGINEER by CONTRACTOR in an electronic PDF file format, unless otherwise specified.
 - a. Identify each miscellaneous Submittal by Project name and number, Contract title and number, and the specification section and article number marked thereon or in the letter of transmittal. Unidentifiable Submittals will be returned for proper identification.
 - b. Check and stamp Miscellaneous Submittals of Subcontractors, Suppliers, and MANUFACTURERS with CONTRACTOR's approval prior to transmitting them to the ENGINEER. CONTRACTOR's stamp of approval shall constitute a representation to the CITY that CONTRACTOR has either determined and verified all information, or he assumes full responsibility for doing so, and that he has coordinated Miscellaneous Submittal with the requirements of the WORK and the Contract Documents.
 - c. At the time of each submission, call to the attention of the ENGINEER in the letter of transmittal any deviations from the requirements of the Contract Documents.
 - d. Make all modifications noted or indicated by ENGINEER and return revised copies until accepted. Direct specific attention in writing, or on revised Submittals, to changes other than the modifications called for by the ENGINEER on previous Submittals. After Submittals have been accepted, submit copies thereof for final distribution.
 - e. Provide the CITY a copy of the final approved Miscellaneous Submittals package for record keeping.
 2. Test Reports:

- a. Responsibilities of CONTRACTOR and CITY regarding tests and inspections of Equipment and Materials and completed WORK are set forth elsewhere in these Contract Documents.
 - b. The party specified responsible for testing or inspection shall in each case, unless otherwise specified, arrange for the testing laboratory or reporting agency to distribute test reports in an electronic PDF file format to the following parties, unless otherwise specified:
 - i. CITY Resident Project Representative
 - ii. ENGINEER
 - iii. CONTRACTOR
 - iv. MANUFACTURER or supplier
- C. CITY OF FORT LAUDERDALE or ENGINEER Review:
1. CITY/ENGINEER will review Miscellaneous Submittals for indications of WORK or material deficiencies within fifteen (15) working days in CITY/ENGINEER office for original Submittals and ten (10) working days for reviewing resubmittals.
 2. CITY/ENGINEER will respond to CONTRACTOR on those Miscellaneous Submittals which indicate WORK or material deficiency.

PART 2 - PRODUCTS (Not applicable)

PART 3 - EXECUTION

- 3.01 SUBMITTAL LOG: CONTRACTOR shall maintain an accurate Submittal Log and a Distribution List for the duration of the WORK, showing status of all Submittals and Distributees at all times in a form acceptable to the CITY and ENGINEER. CONTRACTOR shall make the Submittal Log available to the CITY and ENGINEER for its review on request and shall bring a copy of the Submittal Log to all Progress Meetings.

END OF SECTION

SECTION 01310 CONSTRUCTION PROGRESS SCHEDULES

PART 1 - GENERAL

1.01 SCOPE:

- A. Summary 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, latest edition, 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 Work Specified Elsewhere:
 - 1. SECTION 01010 - Summary of Work
 - 2. SECTION 01200 - Project Meetings
 - 3. SECTION 01300 - Submittals

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.
 - 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. Structural framing.
 - f. Subcontractor work.
 - g. Equipment installations.
 - h. Painting.
 - i. Testing.
 - j. Project closeout.
- B. Submittals for construction progress schedules shall 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 as applicable (equipment, materials, etc.).
- D. To the extent that the progress schedule or any revised progress schedule shows anything not jointly agreed upon or fails to show anything jointly agreed upon, it shall not be deemed to have been approved by the Engineer. Failure to include any element of work required for the performance of this Contract shall not excuse the Contractor from completing all work required within any applicable completion date, notwithstanding the Engineer's approval of the progress schedule.
- E. Scheduling Constraints: The work within Owner's property must be completed within the maximum number of days start to finish, as indicated in the Contract. Additionally, work must proceed on a continuous basis, without stoppages, except for nights and weekends. There shall be no lapses between phases of construction.

1.05 PROGRESS REVISIONS:

- A. Indicate progress of each activity to date of submission.
- B. Show changes occurring since previous submission of schedule:
 - 1. Major changes in scope.
 - 2. Activities modified since previous submission.
 - 3. Revised projections of progress and completion.
 - 4. Other identifiable changes.
- C. Provide a narrative report as needed to define:
 - 1. Problem areas, anticipated delays, and the impact on the schedule.
 - 2. Corrective action recommended, and its effect.
 - 3. The effect of changes on schedules of other prime contractors.
- D. If the Work falls behind the critical path schedule by two (2) weeks or more, the Contractor shall prepare a recovery schedule.

1.06 SUBMISSIONS:

- A. Submittal Requirements:
1. Logic network and/or time-phased bar chart, computer generated.
 2. Computerized network analysis:
 - a. Sort by early start
 - b. Sort by float
 - c. Sort by predecessor/successor
 3. Narrative description of the logic and reasoning of the schedule.
- B. Time of Submittals.
1. Within ten (10) working days after Notice to Proceed, Contractor shall submit a network diagram describing the activities to be accomplished in the project and their dependency relationships, (predecessor/successor) as well as a tabulated schedule as herein defined. The total length of time indicated on the initial CPM schedule shall equal the exact number of days in the Contract Time as defined in the Agreement with the Owner. 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 review the complete schedule within a timely fashion and provide comments as they see fit. It is the Contractor's responsibility to submit an accurate, detailed representation of the project work and timelines required for the actual effort. 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 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, 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, latest edition.
- 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 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 performances 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.
 - 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. For 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:

- A. For the monthly progress meeting, Contractor shall submit a revised CPM schedule and a three- week look-ahead schedule, showing all activities completed, in progress, uncompleted, or scheduled to be worked during the weeks. The three weeks include the current week plus the next two weeks. All activities shall be from the approved CPM and must be as shown on the CPM unless behind or ahead of schedule. One copy of the revised CPM schedule shall be submitted with each copy of that month's application for payment, six (6) copies minimum.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01320 CONSTRUCTION VIDEO AND PHOTOGRAPHS

PART 1 - GENERAL

1.01 SCOPE:

- A. Summary of Work: This SECTION specifies administrative and procedural requirements for construction photographs.
- B. Related Work Specified Elsewhere:
 - 1. SECTION 01300 - Submittals

1.02 SUBMITTALS:

- A. Submit photographs electronically as specified in SECTION 01300 and in PART 3, this SECTION.

1.03 QUALITY ASSURANCE:

- A. Photographs and video shall be clear and sufficient to show significant detail, not blurred, or taken in shadow, nor too distant. The CITY may require that the photographs or video be retaken should the quality be insufficient. Costs for such re-takes are the CONTRACTOR's responsibility at no extra cost to the CITY.

PART 2 - PRODUCTS

2.01 PHOTOGRAPHIC REQUIREMENTS:

- A. Specified in PART 3, this SECTION.

PART 3 - EXECUTION

3.01 PROGRESS SITE PHOTOGRAPHS:

- A. The CONTRACTOR shall be responsible for photographs of the Site to show the existing and general progress of the WORK. The CITY will advise as to which views are of interest. Photographs shall be taken of the following areas and at the following times.
 - 1. Existing Site conditions before Site WORK is started. Number of views shall be adequate to cover the Site.
 - 2. Progress of the WORK from beginning and throughout construction. Progress photos must be provided with each pay request. Pay requests will not be considered acceptable until photographs are provided. Number of views shall be adequate to cover the Site.
 - 3. Finished Project after completion of WORK. Number of views shall be adequate to show the finished WORK.
 - 4. If Project is not completed during the Contract Time, or authorized extensions, photographs shall continue to be taken at no increase in Contract Price.
- B. Photographs shall be taken with three (3) megapixel minimum resolution.
- C. Provide a FLASH DRIVE containing all photographic images in JPG format. Label FLASH DRIVE with the name and Contract number of Project, name of CONTRACTOR, description of view, and date photograph was taken.

D. Deliver FLASH DRIVE to CITY with pay applications.

3.02 ADDITIONAL PHOTOGRAPHS:

- A. From time to time the CITY may issue requests for additional photographs, in addition to periodic photographs specified. Additional photographs will be paid for by Change Order, and are not included in the Contract Price or an Allowance.
1. The CITY will give the photographer three (3) days' notice, where feasible.
 2. In emergency situations, the photographer shall take additional photographs within 24 hours of the CITY request.
 3. Circumstances that could require additional photographs include, but are not limited to:
 - a. Substantial Completion of a major phase or component of WORK.
 - b. CITY request for special publicity photographs.
 - c. Special events planned at Project Site.
 - d. Immediate follow-up when on-site events result in construction damage or losses.
 - e. Photographs to be taken at fabrication locations away from Project Site.
 - f. Extra record photographs at time of final acceptance.

END OF SECTION

SECTION 01410 TESTING AND QUALITY CONTROL

PART 1 - GENERAL

1.01 SCOPE:

A. Summary of Work:

1. The CONTRACTOR shall provide and maintain an effective Quality Control Program that fulfills the requirements of *"Warranty and Guarantee, Tests and Inspections, Correction, Removal or Acceptance of Defective Work"* of the GENERAL TERMS & CONDITIONS.
2. The CONTRACTOR shall establish and implement a Quality Control Plan to perform sufficient inspection of all items of the WORK, including that of Subcontractors, to insure conformance to the Technical Specifications and the Drawings with respect to the materials, workmanship, construction, equipment performance, and identification.
3. The CONTRACTOR's job supervisory staff may be used for quality control, supplemented as necessary by additional personnel for surveillance or special technicians to provide capability for the controls required by the Technical Specifications. The CONTRACTOR's Quality Control Plan must clearly identify the quality control leader and personnel organizational system. The leader must have the authority to direct the removal and replacement of defective work.
4. After the Contract is awarded and before the construction begins, the CONTRACTOR shall meet with the CITY or its representative to discuss quality control requirements. The meeting shall develop mutual understanding relative to the details of the Quality Control Plan, including the appropriate forms to be used for recording the quality control operations, inspections, administration of the Quality Control Plan, and the interrelationship of the CONTRACTOR and the CITY inspection.
5. The CONTRACTOR shall submit his written Quality Control Plan for review, describing the activities and listing those inspection and testing activities that the CONTRACTOR will perform prior to beginning the WORK. The CONTRACTOR's Quality Control Plan shall describe how he will communicate timely notification to allow for testing and inspection activities performed by the CITY, or its representatives, for on and off-site construction activities.
6. All compliance inspections shall be recorded on the appropriate forms, including but not limited to the specific items required in each SECTION of the Technical Specifications. The completed forms, including record of corrective actions taken, shall be furnished to the CITY. The CITY's quality control representative will maintain a list of all deficiencies which are not corrected the same day as they are discovered.
7. Should recurring deficiencies in an item or items indicate that the Quality Control Plan is not adequate, the CONTRACTOR shall take corrective actions as directed by the CITY to update the Quality Control Plan, to satisfactorily address and resolve any reoccurring deficiencies.

B. Related Work Specified Elsewhere:

1. SECTION 01300 – Submittals
2. SECTION 01310 – Construction Progress Schedules
3. SECTION 01320 – Construction Video & Photographs
4. SECTION 03100 – Concrete Formwork and Access
5. SECTION 03200 – Concrete Reinforcement

6. SECTION 03300 – Cast-in-Place Concrete
7. SECTION 03600 – Grout
8. SECTION 09900 – Protective Coatings

1.02 TESTING LABORATORY SERVICES:

- A. All tests which require the services of a laboratory to determine compliance with the Contract Documents shall be performed by an independent commercial testing laboratory acceptable to the CITY. The laboratory shall be staffed with experienced technicians, and shall be properly equipped, ACI certified, and fully qualified to perform the tests in accordance with the specified standards.

1.03 TESTING LABORATORY SERVICES FURNISHED BY CONTRACTOR:

- A. All testing required in connection with the performance of the WORK shall be performed and paid for by the CONTRACTOR, and a certified copy of the results will be furnished to the CITY within five (5) days of the test.
- B. The CONTRACTOR is also responsible for all testing and inspection services required to achieve an effective Quality Control Program, to assure that the WORK strictly complies with the Contract requirements. The CONTRACTOR shall pay all costs for such services. The CONTRACTOR shall also pay for any tests performed by the CITY which do not meet the requirements of the Technical Specifications and as described below.
- C. The CONTRACTOR will secure the services of a materials testing company, for field and laboratory tests, for items of the WORK. The CONTRACTOR will pay all charges for services on cast-in-place concrete. The field sampling and testing will be performed in the general manner indicated in the Technical Specifications, with minimal interference to the construction operations.

While the CONTRACTOR may request testing in order to proceed to a following construction stage, the CITY will determine the exact time and location of the field sampling and testing and may require additional sampling and/or testing as necessary to determine that the materials and equipment conform with the CONTRACTOR-submitted data and with the Contract Documents.

- D. Arrangements for the delivery of samples and test specimens to the testing laboratory under this paragraph will be made by the CONTRACTOR. The testing laboratory shall perform all laboratory tests within a reasonable time consistent with the specified standards and shall furnish a written report of each test.
- E. The CONTRACTOR shall furnish all sample materials and cooperate in the sampling and field testing activities, interrupting the WORK when necessary.
- F. When sampling or testing activities are performed in the field by testing laboratory personnel, the CONTRACTOR shall furnish personnel and facilities to assist in the activities.

1.04 TRANSMITTAL OF TEST REPORTS:

- A. Written reports of test and engineering data furnished by the CONTRACTOR shall be submitted as specified in SECTION 01300.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION

SECTION 01530 TEMPORARY BARRIERS AND CONTROLS

PART 1 - GENERAL

1.01 SCOPE:

- A. Summary of Work: This SECTION includes General Requirements for:
 - 1. Protection of the WORK
 - 2. Protection of existing property
 - 3. Barriers
 - 4. Security
 - 5. Environmental controls
 - 6. Access roads and parking areas
 - 7. Traffic control and use of roadways
- B. Related Work Specified Elsewhere:
 - 1. SECTION 01300 – Submittals
 - 2. SECTION 01700 - Contract Closeout

1.02 APPLICABLE STANDARDS AND PUBLICATIONS:

- A. Standards or Codes: The edition of the publications of the organizations listed below in effect at the time of the advertisement for bids form a part of this specification to the extent referenced. In the case of a conflict between the requirements of this SECTION and those of the listed document, the requirements of this SECTION shall prevail.
 - 1. Florida Department of Transportation (FDOT) Standard Specifications for Road and Bridge Construction

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.01 SAFETY AND PROTECTION OF WORK AND PROPERTY:

- A. General:
 - 1. The CONTRACTOR shall provide for the protection of the WORK as set forth in the GENERAL TERMS & CONDITIONS. Always Provide protection against rain, wind, storms, frost, freezing, condensation, or heat so as to maintain all WORK and Equipment and Materials free from injury or damage. At the end of each day all new WORK likely to be damaged shall be appropriately protected.
 - 2. The CONTRACTOR shall notify the CITY immediately if at any time, operations are stopped due to conditions which make it impossible to continue or to obtain proper results.
 - 3. The CONTRACTOR shall construct and maintain all necessary temporary drainage and do all pumping necessary to keep excavations, pits, and trenches dewatered sufficiently to permit continuous construction.
 - 4. The CONTRACTOR shall protect floors from damage by proper covering and care when handling heavy equipment, painting, or handling mortar or other such materials.

Use proper cribbing and shoring to prevent overloading of floors while moving heavy equipment. Provide metal pans under pipe-threading machines and other machines that may leak oil and clean such pans daily, keeping oil off the floors. Restore floors to former condition where damaged or stained.

5. The CONTRACTOR shall not load concrete floors less than 28-days old without the written permission from the CITY
 6. The CONTRACTOR shall restrict access to roofs except as required by the WORK. Where access is required, provide protection with plywood, boards, or other suitable materials.
- B. Property Other than CITY:
1. The CONTRACTOR shall provide for the protection of property as set forth in the GENERAL TERMS & CONDITIONS. Report immediately to the owners thereof and promptly repair damage to existing facilities resulting from construction operations.
 2. Names and telephone numbers of representatives of the power company having jurisdiction over power lines in the WORK area can be obtained from the CITY. The CONTRACTOR shall contact the power company a minimum of seven (7) calendar days prior to performing WORK within 500' of power transmission line property, right-of-way or easement lines.
 3. The applicable requirements specified for protection of the WORK shall also apply to the protection of existing property of others.
 4. The CONTRACTOR shall restore all property affected by the CONTRACTOR's operations to the original or better condition, to the satisfaction of the CITY

3.02 BARRIERS:

A. General:

1. The CONTRACTOR shall furnish, install, and maintain suitable barriers as required to prevent public entry, protect the public, and to protect the WORK, existing facilities, trees, and plants from construction operations. Remove the barriers when no longer needed or at completion of the WORK.
2. The CONTRACTOR may use new or used materials, suitable for the intended purpose, but must not violate requirements of applicable codes and standards or of regulatory agencies.
3. Barriers shall be of a neat and reasonably uniform appearance, structurally adequate for the required purposes.
4. The CONTRACTOR shall maintain barriers in good repair and a clean condition for adequate visibility.
5. The CONTRACTOR shall relocate barriers as required by progress of the WORK.
6. The CONTRACTOR shall repair damage caused by the installation of barriers and restore damaged areas to original or better condition, to the satisfaction of the CITY.

3.03 ENVIRONMENTAL CONTROLS:

A. Dust Control:

1. If appropriate and at the discretion of the CITY, the CONTRACTOR shall provide and apply methods of positive dust control to minimize raising dust from construction operations.

2. The CONTRACTOR shall clean interior spaces and surfaces prior to the start of finish painting and continue cleaning on an as-needed basis until painting is finished.
 3. The CONTRACTOR shall schedule operations so that dust and other contaminants will not fall on wet or newly-coated surfaces.
 4. The CONTRACTOR shall cover materials transported to and from Site as necessary to prevent depositing material on offsite roadways or creating dust.
- B. Water and Erosion Control:
1. The CONTRACTOR shall provide methods necessary to control surface water to prevent damage to the WORK, the Site, or adjoining properties as specified in SECTION 02436.
 2. The CONTRACTOR shall control fill, grading, and ditching to direct surface water away from excavations and other construction areas, and to direct surface water to proper storage and/or conveyance facilities.
 3. The CONTRACTOR shall control surface water and ground water as necessary to prevent flooding, erosion, or other damage to any portion of the Site and/or to adjoining areas.
- C. Debris Control and Clean-Up:
1. The CONTRACTOR shall always keep the premises free from accumulations of debris, waste materials, and rubbish. The CONTRACTOR's responsibilities shall include, but not be limited to the following:
 - a. Adequate trash receptacles at the Site emptied promptly when filled.
 - b. Periodic cleanup to avoid hazards or interference with operations at the Site and to maintain the Site in a reasonably neat condition.
 - c. The keeping of construction materials such as forms and scaffolding neatly stacked.
 - d. Immediate cleanup to protect the WORK by removing splattered concrete, oil, paint, corrosive liquids, and cleaning solutions from walls, floors, and other surfaces before the surfaces are marred.
 2. The CONTRACTOR shall prohibit overloading of trucks to prevent spillages on access and haul routes. Provide periodic inspection of traffic areas to enforce requirements.
 3. Final cleanup is specified in SECTION 01700.
- D. Pollution Control:
1. The CONTRACTOR shall provide methods, means, and facilities required to prevent contamination of soil, water, or atmosphere by the discharge of hazardous or toxic substances from construction operations.
 2. The CONTRACTOR shall provide equipment and personnel and perform emergency measures required to contain any spillages, and to remove contaminated soils or liquids. Excavate and dispose of any contaminated earth off-site in approved locations and replace with suitable compacted fill and topsoil.
 3. The CONTRACTOR shall take special measures to prevent harmful substances from entering public waters, sanitary sewers, or storm sewers.
 4. If hazardous materials are discharged, report to authorities as required by applicable law or regulations and notify the CITY, immediately.

3.04 TRAFFIC CONTROL AND USE OF ROADWAYS:

A. Traffic Control:

1. The CONTRACTOR shall provide, operate, and maintain equipment, services, and personnel, with traffic control and protective devices, as required to expedite safe vehicular traffic flow on haul routes, at Site entrances, onsite access roads, and parking areas. This includes barricades and other devices or personnel as necessary to adequately protect the public. Prepare and submit a Traffic Control Plan to CITY for review.
2. The CONTRACTOR shall remove temporary equipment and facilities when no longer required. Restore grounds to original, better, or specified conditions.
3. The CONTRACTOR shall provide and maintain suitable detours or other temporary expedients if necessary.
4. Bridge over open trenches where necessary to maintain traffic.
5. The CONTRACTOR shall consult with applicable governing authorities to establish public thoroughfares which will be used for Site access. All operations shall meet the approval of owners or agencies having jurisdiction.

B. Maintenance of Roadways:

1. The CONTRACTOR shall repair on and off-site roads, CITY structures and any damaged items due to Contractor's operations. Keep traffic areas as free as possible of excavated materials and maintain in a manner to eliminate dust, mud, and hazardous conditions.
2. All operations and repairs shall meet the approval of owners or agencies having jurisdiction.

3.05 SECURITY:

- A. The CONTRACTOR is solely responsible for initiating and maintaining security at the construction Site. CONTRACTOR shall take all necessary precautions for the security of, and shall provide the necessary protection to:
1. Materials and equipment incorporated into the WORK or stored on-site prior to incorporation into the WORK.
 2. Plant and equipment including any equipment furnished for use by the CITY.
- B. The CONTRACTOR shall replace, in kind, any materials or equipment lost, damaged or destroyed at no cost to the CITY.

END OF SECTION

SECTION 01600 EQUIPMENT AND MATERIALS

PART 1 - GENERAL

1.01 SCOPE:

- A. Summary of Work: This SECTION includes general requirements for transportation, handling, delivery, storage, and protection of CONTRACTOR and CITY- furnished Equipment and Materials.
- B. Related Work Specified Elsewhere:
 - 1. SECTION 01300 – Submittals
 - 2. SECTION 01630 - Product Options and Substitutions

1.02 DEFINITIONS: Definitions used in this Paragraph are not intended to negate the meaning of other terms used in the Contract Documents, including such terms as "systems," "structure," "finishes," "accessories," "furnishings," "special construction," and similar terms. Such terms are self-explanatory and have recognized meanings in the construction industry.

- A. Products: Items purchased for incorporation in the WORK, regardless of whether they were specifically purchased for the Project or taken from the previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and other terms of similar intent.
- B. Equipment: A product with operational or non-operational parts, regardless of whether motorized, manually operated, or fixed. Equipment may require service connections such as wiring or piping.
- C. Materials: Products that must be substantially cut, shaped, worked, mixed, finished, refined or otherwise fabricated, processed, or installed to form part of the WORK.

1.03 QUALITY CONTROL:

- A. Equipment and Material Incorporated into the WORK: Provide products that comply with the requirements of the Contract Documents, are undamaged, and unless otherwise indicated, are unused at the time of installation. The CONTRACTOR shall provide products that are complete with all accessories, trim, finish, safety guards, and other devices and details needed for a complete installation and for the intended use and effect.
- B. Standard Products: Where they are available and comply with the Technical Specifications, provide standard products of types that have been produced and used successfully in similar situations on other projects.
- C. Continued Availability: Where, because of the nature of its application, the CITY is likely to need replacement parts or additional amounts of a product at a later date, either for maintenance and repair or replacement, provide standard products for which the MANUFACTURER has published assurances that the products and its parts are likely to be available to the CITY at a later date.
 - 1. Conform to applicable Technical Specifications, codes, standards, and regulatory agency requirements.
 - 2. Comply with size, make, type, and quality specified, or as specifically approved in writing by the CITY.
 - 3. Manufactured and Fabricated Products:

- a. Design, fabricate, and assemble in accordance with the best engineering and shop practices.
 - b. Manufacture like parts of duplicate units to standard sizes and gauges, to be interchangeable.
 - c. Equipment and Materials shall be suitable for service conditions intended.
 - d. Equipment capacities, sizes, and dimensions indicated or specified shall be adhered to unless variations are specifically approved in writing.
 - e. Provide labels and nameplates where required by regulatory agencies or to state identification and essential operating data.
 - f. Two (2) or more items of the same kind shall be identical, supplied by the same MANUFACTURER.
4. Do not use equipment and material for any purpose other than that for which it is designed or is specified.
- D. Source Limitations: To the fullest extent possible, provide products of the same kind from a single source.
- E. Identification: Each item of equipment shall have permanently affixed to it a label or tag with its equipment number designated in this Contract. The label or tag shall be stainless steel and shall be located so as to be easily visible.

1.04 TRANSPORTATION AND SHIPMENT:

- A. Shipment Preparation: The CONTRACTOR shall require MANUFACTURERS and suppliers to prepare Equipment and Materials for shipment in a manner to facilitate unloading and handling, and to protect against damage or unnecessary exposure in transit and storage, for CONTRACTOR supplied equipment. Provisions for protection shall include the following:
- 1. Crates or other suitable packaging materials
 - 2. Covers and other means to prevent corrosion, moisture damage, mechanical injury, and accumulation of dirt in motors, electrical equipment, and machinery
 - 3. Suitable rust-preventive compound on exposed machined surfaces and unpainted iron and steel
 - 4. Grease packing or oil lubrication in all bearings and similar items
 - 5. Precast concrete components shall be transported, lifted and stored as specified by the precast supplier. Precast supplier shall provide written instructions to the CONTRACTOR as to the above. The CONTRACTOR shall provide a copy to the CITY.
- B. Marking: Each item of Equipment and Material shall be tagged or marked as identified in the delivery schedule or on Submittals, submitted in accordance with SECTION 01300. Complete packing lists and bills of material shall be included with each shipment. Each piece of every item need not be marked separately, provided that all pieces of each item are packed or bundled together, and the packages or bundles are properly tagged or marked.

1.05 DELIVERY, STORAGE AND HANDLING:

- A. Delivery – The CONTRACTOR shall:
- 1. Arrange deliveries of Equipment and Materials in accordance with cost loaded construction schedules, in ample time to facilitate inspection prior to installation, and to avoid delay of the WORK.

2. Deliver, store, and handle Equipment and Materials in accordance with the MANUFACTURER's recommendations using means and methods that will prevent damage, deterioration, and loss, including theft.
 3. Control delivery schedules to minimize long term storage at the Site and to prevent overcrowding of construction areas. Coordinate delivery and installation to ensure minimum holding or storage times for items known or recognized to be flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other sources of loss.
 4. Avoid conflict with Work of CITY or other contractors.
 5. Deliver Equipment and Materials to the Site in MANUFACTURER's sealed containers or other packaging system with identifying labels and instructions for handling, storing, unpacking, protecting, and installing.
 6. Mark deliveries of component parts of equipment to identify the equipment, to permit easy accumulation of parts, and to facilitate inspection and measurement of quantity or counting of units.
 7. Immediately upon delivery, inspect shipment to assure:
 - a. That each product complies with requirements of Contract Documents and reviewed Submittals.
 - b. Quantities are correct.
 - c. Containers and packages are intact, labels are legible.
 - d. Equipment and Materials are properly protected and undamaged.
- B. Storage – The CONTRACTOR shall:
1. Store Equipment and Materials immediately after delivery and protect it as necessary until completion of the WORK. Store in accordance with MANUFACTURER's instructions with seals and labels intact and legible.
 2. Store Equipment and Materials in a manner that will not endanger the supporting construction and/or existing structures and facilities.
 3. Store Equipment and Materials that are subject to damage by elements in weathertight enclosures.
 4. Maintain temperature and humidity within ranges required by the MANUFACTURER.
 5. Protect motors, electrical equipment, plumbing fixtures, and machinery of all kinds against corrosion, moisture deteriorations, mechanical injury, and accumulation of dirt or other foreign matter.
 6. Protect exposed-machined surfaces and unpainted iron and steel as necessary with suitable rust-preventive compounds.
 7. Protect bearings and similar items with grease packing or oil lubrication.
 8. Handle and store steel plate, sheet metal, and similar items in a manner to prevent deformation.
 9. Exterior Storage – The CONTRACTOR shall:
 - a. Provide platforms, blocking, or skids to support fabricated products aboveground; and to prevent soiling, staining and damage. Cover products subject to discoloration or deterioration from exposure to the elements, with impervious sheet coverings. Provide adequate ventilation to avoid condensation.
 - b. Store loose granular materials on solid surface areas to prevent mixing with foreign matter.

- c. Provide surface drainage to prevent flow or ponding of rainwater.
 - 10. Equipment and Materials shall not show any pitting, rust, decay, or other deleterious effects of storage prior to final acceptance of WORK.
 - 11. Arrange storage in a manner to provide easy access for inspection. Make periodic inspections of stored products to assure that products are maintained under specified conditions and are free from damage or deterioration.
- C. Handling – The CONTRACTOR shall:
- 1. Provide equipment and personnel necessary to properly unload and handle Equipment and Materials, by methods to prevent damage, soiling and /or staining of the Equipment and Materials, or packaging.
 - 2. Handle by methods to prevent bending or overstressing. Where lifting points are designated, lift components only at those points.
 - 3. Provide additional protection to surrounding surfaces as necessary to prevent damage.
- D. Maintenance of Storage – The CONTRACTOR shall:
- 1. Inspect stored Equipment and Materials on a regularly scheduled basis.
 - 2. Verify that storage facilities comply with the MANUFACTURER's product storage requirements, including environmental conditions continually maintained.
 - 3. Verify that surfaces of products exposed to elements are not adversely affected; that any weathering of finishes is acceptable under requirements of Contract Documents.
 - 4. For mechanical and electrical equipment in long-term storage, provide the MANUFACTURER's service instructions to accompany each item, with notice of enclosed instructions on the exterior of the package. Service the Equipment, as necessary on a regularly scheduled basis.
- E. Protection after installation – The CONTRACTOR shall:
- 1. Provide substantial coverings as necessary to protect all installed Equipment and Materials from damage from subsequent construction operations. Remove the protective coverings when no longer needed or as specified.

1.06 EXISTING EQUIPMENT AND MATERIALS:

- A. Equipment and Materials to be reused:
- 1. For Equipment and Materials specifically indicated or specified to be reused in the WORK, use special care in removal, handling, storage, and reinstallation to assure proper function in the completed WORK.
 - 2. Arrange for transportation, storage and handling of products which require off-site storage, restoration, or renovation and pay all costs for such work.
 - 3. The CONTRACTOR may at his option, furnish and install new items in lieu of those specified to be reused.
 - 4. Remove, relocate and reinstall the following Equipment and Materials:
 - a. Rain Gauge
- B. Equipment and Materials not to be reused:
- 1. The following Equipment and Materials to be removed shall remain CITY property and are not to be reused in the WORK. The CONTRACTOR shall Remove from its location, prepare for handling and storage, and deliver to CITY

- a. Gates, hoist framing, cables, construction blocks, and all equipment and materials associated with the hoist lifting system.
- C. Equipment and Materials designated to be removed but not reused or delivered to CITY, shall become the property of the CONTRACTOR and shall be removed from the Site.

PART 2 - PRODUCTS

2.01 PRODUCTS AND MANUFACTURERS:

- A. Specified in each applicable SECTION of the Technical Specifications and/or Drawings.

2.02 PRODUCT SELECTION AND SUBSTITUTIONS:

- A. Specified in the Instructions to Bidders and General Terms & Conditions

PART 3 - EXECUTION

3.01 MANUFACTURER'S INSTRUCTIONS:

- A. Installation:
 - 1. When Contract Documents require that installation of WORK shall comply with MANUFACTURER's printed instructions, the CONTRACTOR shall:
 - a. Obtain and distribute copies of such instructions if not a part of Submittals, containers, or packaging to all parties involved in the installation, including a copy to the CITY
 - b. Maintain one complete set of instructions at the Site during installation and until Final Acceptance.
 - c. Handle, install, connect, clean, condition, and adjust all products in accordance with such instructions and in conformance with the specified requirements. Should job conditions or specified requirements conflict with the MANUFACTURER's instructions, consult with the CITY for further instructions.
 - d. Not omit any preparatory step or installation procedure unless specifically modified or exempted by the Contract Documents or approved in writing by the MANUFACTURER and the CITY.
 - e. Accurately locate and align with other work and anchor all Equipment and Materials securely in place except as required for proper movement and performance.
 - f. Clean and protect all exposed surfaces as necessary to ensure freedom from damage and deterioration until Final Acceptance.

END OF SECTION

SECTION 01630 PRODUCT OPTIONS AND SUBSTITUTIONS

PART 1 - GENERAL

1.01 SCOPE:

- A. This SECTION covers the CITY review procedures for CONTRACTOR's requests of acceptable substitute items of material and equipment. All requests for substitution shall be made no earlier than the Effective Date of the Contract. See Article 22 of the Instructions to the Bidders of this Contract Document. A determination of acceptability or rejection of the substitution request will be made in accordance with paragraph 6.05 of Section 00700 - General Terms and Conditions.
- B. Requests received prior to the date established above will not be considered.
- C. Substitutions may be approved at the CITY sole discretion where one or more of the following conditions apply:
 - 1. The substitution must be required for compliance with final interpretation of code requirements or regulations.
 - 2. The substitution must be due to the unavailability of the specified products, through no fault of the CONTRACTOR.
 - 3. The substitution may be requested when subsequent information discloses the inability of the specified products to perform properly or to fit in the designated space.
 - 4. The substitution may be requested when in the judgment of the CITY a substitution would be substantially to the CITY best interests in terms of cost, time or other considerations.
- D. Related Work Specified Elsewhere:
 - 1. SECTION 01300 – Submittals

1.02 SUBSTITUTION REQUEST:

- A. Submit as required in SECTION 01300:
 - 1. Complete data substantiating compliance of the proposed substitution with the Contract Document
 - a. Product identification including MANUFACTURER's name and address
 - b. MANUFACTURER's literature including product description, performance and test data, and reference standards
 - c. Name and address of similar projects on which product was used and dates of installation
 - 2. Itemized comparison of proposed substitution with product or method specified
 - 3. Data relating to changes in the construction schedule
 - 4. Accurate cost data on proposed substitution in comparison with product or method specified
- B. In submitting the request for substitution, the CONTRACTOR makes the following representations:
 - 1. The CONTRACTOR has investigated the proposed product and has determined that it is equal or superior in all respects to that specified.
 - 2. The CONTRACTOR will provide the same warranty or guarantee for the substitution as for the product specified.
 - 3. The CONTRACTOR will coordinate installation of the accepted substitution into the WORK, making such changes as may be required for the WORK to be completed in all respects.

4. The CONTRACTOR waives all claims for additional costs related to substitution that subsequently becomes apparent.
5. Cost data is complete and includes all related costs under the Contract.

1.03 CITY ENGINEER'S REVIEW:

- A. The CITY, in evaluating the request for substitution, will consider all variations of the proposed substitute from that specified to determine the acceptability of the proposal. The CITY may require the CONTRACTOR to furnish additional data about the proposed substitute necessary to make such a determination. The CITY will be the sole judge of acceptability, and no substitute will be ordered or installed without the CITY prior written acceptance. The CITY may require the CONTRACTOR to furnish, at the CONTRACTOR's expense, a special performance guarantee or other surety with respect to any substitute. Substitutions will not be considered if:
 1. Substitutions are indicated or implied on Shop Drawings or product data submittals without a request submitted in accordance with this SECTION.
 2. Acceptance will require substantial revision to the Contract Documents.

END OF SECTION

SECTION 01700 CONTRACT CLOSEOUT

PART 1 - GENERAL

1.01 SCOPE:

- A. Summary of Work: This SECTION includes administrative and procedural requirements for Contract Closeout including, but not limited to, the following:
 - 1. Inspection procedures
 - 2. Project record document submittal
 - 3. Operation and maintenance manual submittal
 - 4. Submittal of Warranties of All Equipment
 - 5. Final cleaning
 - 6. CONTRACTOR's Certification
- B. Closeout requirements for specific construction activities are included in the appropriate SECTIONS in DIVISIONS 1 through 9.
- C. Related Work Specified Elsewhere:
 - 1. SECTION 01300 - Submittals
 - 2. SECTION 01530 - Temporary Barriers and Controls

1.02 SUBSTANTIAL COMPLETION:

- A. Preliminary Procedures: Before requesting inspection for certification of Substantial Completion, the CONTRACTOR shall satisfy the following:
 - 1. Submit specific warranties, workmanship bonds, maintenance agreements, final certifications, and similar documents. Submit in accordance with SECTION 01300.
 - 2. Obtain and submit releases enabling the CITY unrestricted use of the WORK and access to services and utilities. Include Certificates of Occupancy (C.O.), operating certificates, and similar releases, as required.
 - 3. Submit Record Documents, including but not limited to, maintenance manuals, Project photographs, and similar record information as specified in Paragraph 1.04. All drawings shall be scanned and submitted in accordance with SECTION 01300, and in hard copy form, 24 inch by 36 inch plan size. All other documents shall also be scanned and submitted in accordance with SECTION 01300.
 - 4. Complete final cleanup requirements, including touch up painting.
 - 5. Touch up and otherwise repair and restore marred, exposed finishes.
- B. Inspection Procedures: On receipt of a request for inspection, the CITY will either proceed with inspection or advise the CONTRACTOR of unfilled requirements. The CITY will prepare the Certificate of Substantial Completion following inspection or advise the CONTRACTOR of WORK that must be completed or corrected before the certificate will be issued.
 - 1. The CITY will reschedule the inspection when in its opinion, the WORK is substantially complete.

1.03 FINAL ACCEPTANCE:

- A. Preliminary Procedures: Submit certification by CONTRACTOR that WORK has been completed in accordance with the Contract Documents to the knowledge of the CONTRACTOR. Before requesting final inspection, complete the following:
 - 1. Submit the final payment request with releases and supporting documentation. Include insurance certificates for products and completed operations where required.

2. Submit a letter certifying that all items listed as part of the Certification of Substantial Completion have been completed or corrected.
 3. Submit consent of surety to final payment.
 4. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
 5. Submit Release of Liens (from the Prime, and all Subcontractors, Vendors and Suppliers).
 6. Submit Maintenance Bond (if applicable).
 7. The above shall be submitted in accordance with SECTION 01300.
- B. Reinspection Procedure: The CITY will reinspect the WORK upon receipt of notice that the WORK, including inspection list items from earlier inspections, has been completed.
1. Upon completion of reinspection, the CITY will advise the CONTRACTOR of WORK that is incomplete or of obligations that have not been fulfilled but are required for final acceptance.
 2. If necessary, the reinspection will be repeated.
- C. Return all keys furnished by the CITY. The CONTRACTOR shall forfeit his key deposit for keys that are not returned.

1.04 RECORD DOCUMENT SUBMITTALS:

- A. General: Do not use record documents for construction purposes. Protect record documents from deterioration and loss in a secure location. Provide access to record documents for the CITY reference during normal working hours.
- B. As-Built Drawings: Maintain a clean, undamaged set of blue or black line white-prints of Drawings and Shop Drawings. Bind sets with durable-paper cover sheets; print suitable titles, dates, and other identification on the cover of each set. Mark the set to show the actual installation where the installation varies substantially from the WORK as originally shown. Mark which drawing is most capable of showing conditions fully and accurately. Where Shop Drawings are used, record a cross-reference at the corresponding location on the Drawings. Give particular attention to concealed elements that would be difficult to measure and record at a later date. Call attention to each entry by drawing a "cloud" around the areas affected.
- C. The CITY will make electronic copies of whatever electronic versions of the Drawings exist, available to the CONTRACTOR for As-Built purposes. The CONTRACTOR must obtain concurrence from the CITY as to form and content of record information provided in electronic format prior to proceeding, but in general, information similar to that noted below needs to be provided.
1. Record information concurrently with construction progress.
 2. Mark record sets with red erasable pencil. Mark each document "AS-BUILT DRAWINGS" in neat, large, printed letters.
 3. Mark new information that is important to the CITY that is not shown on Drawings or Shop Drawings.
 4. Note related Change-Order numbers where applicable.
 5. Include the following:
 - a. Where Submittals (like Shop Drawings) are used for mark-up, record a cross-reference at corresponding location on Drawings.
 - b. Field changes of dimension and detail.
 - c. Changes made by Change Order or other Modifications.
 - d. Details not on original Drawings.
 - e. As-Built shall also include a plot of the actual structure

- f. Give particular attention to concealed elements that would be difficult or expensive to locate at a later date.
 6. Record Specifications: Maintain one (1) complete copy of the Contract Documents including addenda. Include with the Contract Documents one (1) copy of other written construction documents, such as Requests for Information (RFIs), Change Orders and modifications issued in printed form during construction.
 7. Mark these documents to show substantial variations in actual WORK performed in comparison with the text of the Specifications and modifications.
 8. Give particular attention to substitutions and selection of options and information on concealed construction that cannot otherwise be readily discerned later by direct observation.
 9. Note related As-Built information and Product Data.
 10. Upon completion of the WORK, submit Record Specifications to the CITY for the CITY records on Flash Drive in PDF format.
 11. Include the following:
 - a. MANUFACTURER, trade name, catalog number, and Supplier of each product and item of equipment actually installed, including optional and substitute items
 - b. Changes made by Addendum, Change Order, or other Modifications
 - c. Related Submittals
 12. Affix the CONTRACTOR's corporate seal on the cover sheet indicating the documents within are representative of the as-built condition of the Project. The seal shall be signed by an officer of the company.
- D. Record Product Data: Provide one (1) copy of each Product Data submittal. Note related Change Orders and markup of Record Documents.
1. Mark these documents to show significant variations in actual WORK performed in comparison with information submitted. Include variations in products delivered to the Site and from the MANUFACTURER's installation instructions and recommendations.
 2. Give particular attention to concealed products and portions of the WORK that cannot otherwise be readily discerned later by direct observation.
- E. Record Sample Submitted: Immediately prior to Substantial Completion, the CONTRACTOR shall meet with the CITY personnel at the Project Site to determine which Samples are to be transmitted to the CITY for record purposes. Comply with the CITY instructions regarding packaging, identification, and delivery to the CITY.
- F. Miscellaneous Record Submittals: Refer to other Specification SECTIONS for requirements of miscellaneous record keeping and submittals in connection with actual performance of the WORK Immediately prior to the date or dates of Substantial Completion (unless otherwise specified), complete miscellaneous records and place in good order. Identify miscellaneous records properly, bind or file, and submit to the CITY for the CITY records.
- G. Warranties and Bonds: Submit original documents as specified in the General Terms & Conditions, Supplemental Conditions, SECTION 01300, and technical specifications.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.01 FINAL CLEANING:

- A. General: The General Terms & Conditions require general cleaning during construction.
- B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to the condition expected in a normal, commercial building cleaning and maintenance program. Comply with MANUFACTURER's instructions.

1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion.
 - a. Clean the Site of rubbish, litter, and other foreign substances. Rake grounds that are neither paved nor planted to a smooth, even-textured surface.
 - b. Remove temporary structures, tools, equipment, supplies, and surplus materials.
 - c. Remove temporary protection devices and facilities which were installed to protect previously completed WORK.
- C. Removal of Protection: Remove temporary protection and facilities installed for protection of the WORK during construction.
- D. Compliance: Comply with regulations of authorities having jurisdiction and safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on the CITY property. Do not discharge volatile, harmful, or dangerous materials into drainage systems, and surface waters, etc.. Remove waste materials from the Site and dispose of lawfully.
 1. Where extra materials of value remain after completion of associated WORK, they become the CITY property. Dispose of materials of no value to the CITY as directed by the CITY.
- E. Repairs:
 1. Repair damaged protective coated surfaces.
 2. Repair roads and other items damaged or deteriorated because of construction operations, including those which have been damaged, but are not located within the Project limits.
 3. Restore all ground areas affected by construction operations.

END OF SECTION

SECTION 02050 DEMOLITION

PART 1 - GENERAL

1.01 SCOPE:

- A. Summary of Work: The CONTRACTOR shall include the removal of existing construction to limits indicated on drawings where structural or other construction operations are to be performed as specified herein. The CITY shall not be responsible for the condition of any items to be removed or salvaged. The CONTRACTOR shall notify the CITY of any unique and/or hazardous waste materials or critical conditions that will be, or may be, encountered.
- B. Related Work Specified Elsewhere:
 - 1. Section 02215 Protection of Existing Structures

1.02 APPLICABLE PUBLICATIONS: (Not Used)

1.03 DEFINITIONS: (Not Used)

1.04 SUBMITTALS:

- A. Schedule of Demolition:
 - 1. Submit proposed methods and operations of demolition for review and approval by the CITY prior to the start of WORK.
- B. Permits:
 - 1. The CONTRACTOR shall be responsible for acquiring appropriate necessary permits for the work. Copies of the permits shall be submitted to the CITY prior to commencement of demolition.

1.05 QUALIFICATIONS: (Not Used)

1.06 RESPONSIBILITIES:

- A. The CONTRACTOR shall not commence demolition of structure(s) prior to written permission of the CITY.
- B. Condition of structures to be demolished:
 - 1. The CITY assumes no responsibility for actual condition of structures to be demolished.
 - 2. Conditions existing at time of inspection for bidding purposes will be maintained by CITY insofar as practicable.
- C. Explosives: The use of explosives will not be permitted.
- D. The CONTRACTOR shall ensure the safe passage of persons around the area of demolition and clearing. The CONTRACTOR shall conduct operations to prevent injury to adjacent structures, other facilities, and any persons.
 - 1. The CONTRACTOR shall protect existing finish work that is to remain in place from damage due to demolition operations.
- E. Traffic:

1. The CONTRACTOR shall conduct operations and the removal of debris to ensure minimum interference with existing access pathways and other adjacent, occupied or used facilities.
 2. Do not close, block or otherwise obstruct access roads or other occupied or used facilities without permission from the CITY.
- F. The CONTRACTOR shall promptly repair damages caused to adjacent facilities by demolition operations at no cost to the CITY.
- G. Utilities Disconnection:
1. The CONTRACTOR shall perform all necessary coordination to locate, disconnect, relocate, and/or protect as needed all existing underground, aboveground, and overhead utilities within the limits of demolition prior to commencement of demolition operations. All expenses incurred for the coordination with utility companies and agencies, shall be at no cost to the CITY.
 2. The CONTRACTOR shall promptly repair damages to existing utilities that are to remain, at no cost to the CITY.

1.07 CERTIFICATIONS AND TESTING: (Not Used)

1.08 INSPECTION COORDINATION: The CONTRACTOR shall provide access to the WORK for the CITY as requested for inspection. The CONTRACTOR shall provide 48 hours' notice of its intention to begin new WORK activities.

1.09 WARRANTY: (Not Used)

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.01 DEMOLITION:

- A. The CONTRACTOR shall provide services for effective air and water pollution controls as required by local authorities having jurisdiction.
- B. If hazardous materials are found, the CONTRACTOR shall notify the CITY immediately.

3.02 DISPOSAL OF DEMOLISHED MATERIALS:

- A. The CONTRACTOR shall remove debris, rubbish, and other materials resulting from demolition operations.
- B. If hazardous materials are encountered during demolition operations, the CONTRACTOR shall comply with all applicable regulations, laws, and ordinances concerning removal, handling, and protection against exposure or environmental pollution.
- C. The CONTRACTOR shall transport materials removed from demolished structures and properly dispose of them at an approved site according to the State, Federal, and local regulations.

3.03 CONNECTIONS TO EXISTING CONSTRUCTION:

- A. The CONTRACTOR shall cut and remove portions of existing construction as required to allow proper installation of new construction.

- B. The CONTRACTOR shall shore, brace and maintain existing structure(s) in a safe condition until permanent supports are completed.
- C. The CONTRACTOR shall repair all damage because of installation of shoring and bracing.

3.04 CLEANUP AND REPAIR:

- A. Upon completion of demolition work, the CONTRACTOR shall remove all tools, equipment, and demolished materials from site; see SECTION 1.01 and SECTION 3.02 of this specification.
- B. The CONTRACTOR shall repair demolition performed more than that required and return structures and surfaces to conditions existing prior to commencement of demolition work. The CONTRACTOR shall repair adjacent construction or surfaces soiled or damaged by demolition work to the satisfaction of the CITY.
- C. The CONTRACTOR shall remove or modify as indicated all existing construction within the construction limits to the extent necessary to permit construction of the work. The CONTRACTOR shall properly dispose of the material at an approved site according to the State, Federal, and local regulations.

END OF SECTION

SECTION 02215 PROTECTION OF EXISTING STRUCTURES

PART 1 - GENERAL

1.01 SCOPE:

- A. Summary of Work: The CONTRACTOR shall furnish all labor, equipment, and materials for protecting existing structures during construction, and for monitoring and documenting the effectiveness of said protection.
- B. Related Work Specified Elsewhere:
 - 1. SECTION 01300 - Submittals
 - 2. SECTION 02050 - Demolition

1.02 APPLICABLE STANDARDS AND PUBLICATIONS:

- A. Standards or Codes: The edition of the standards of the organizations listed below in effect at the time of the advertisement for bids form a part of this specification to the extent referenced. See the various paragraphs for the specified standard. In the case of a conflict between the requirements of this SECTION and those of the listed document, the requirements of this SECTION shall prevail.
 - 1. All applicable local (City, County, Village, Town, Tribe, etc.) codes, regulations, ordinances, and standards.
 - 2. Florida Department of Transportation (FDOT)
 - a. Standard Specifications for Road and Bridge Construction.

1.03 DEFINITIONS:

- A. Existing Nearby Facilities at Risk (ENFAR): the collective name of any and all nearby buildings, structures, facilities, utilities, property, access roads, etc. located within or adjacent to the Site that could receive seismic motion greater than one-half inch per /second (or a more stringent velocity required by a permit or agency) and could be at risk for being damaged from ground vibrations due to construction.

1.04 SUBMITTALS: The CONTRACTOR shall provide the following Compliance Submittals in accordance with SECTION 01300, which are required:

- A. A complete list of all applicable rules and regulations with which they must comply.
- B. Pre-Construction Condition Survey and Vibration Monitoring and Control:
 - 1. The CONTRACTOR shall submit a Pre-Construction Condition survey in accordance with SECTION 01300, not less than ten (10) days prior to commencing construction operations.
 - 2. The CONTRACTOR shall schedule and conduct a pre-construction condition survey. The CONTRACTOR shall provide one (1) person from its organization and its specialist on vibration control who meets the qualifications of Article 1.05 to organize and lead a team, with the CITY and a representative of each ENFAR, in making a pre-construction condition survey. At a minimum, each ENFAR shall be inspected, and its condition documented. The following is a list of each ENFAR specific to this Project for which a pre-construction inspection and report is mandatory whether the ENFAR criteria are met or not:

- C. The Pre-construction condition survey document shall include at a minimum:
- a. A map of the Project Site with areas of concern highlighted.
 - b. Photographically documented existing conditions, and instances of pre-existing cracks or other defects. The documentation shall clearly identify each item. Documentation shall describe the location, the direction from which the photo was taken, and dates. Documentation shall include a narrative of each issue. CONTRACTOR shall note the condition of the existing structures and shall locate and identify any areas where bulging, sloughing, cracking, or existing damage is observed.
 - c. Actual measured horizontal and vertical dimensions (not estimated dimensions) from the nearest operations to surveyed properties, structures, utilities or facilities. The CONTRACTOR is required to have a Professional Land Surveyor registered in the State of Florida supervise the measurements and recording of this information.
 - d. Pertinent diaries or logs of conversations with owners related to the pre-construction condition of the inspected ENFAR's.
 - e. The CONTRACTOR shall clearly document existing conditions.
- D. Seismic Monitoring Records:
1. The records shall be clearly tied to specific construction events and include instrument identification, locations, dates, and times with tabulated and summarized results.
- E. Damage Investigation Survey Document:
1. Within seven (7) calendar days of any WORK event causing damage to any property or part of the property, a survey shall be conducted. Such survey shall include as a minimum:
 - a. Detailed description of the damage, including videotape or photographic documentation.
 - b. Evaluation of the cause of the damage and measures taken or to be taken to prevent recurrence.
 2. The CONTRACTOR shall supplement this report on a bi-weekly basis (or other time period as determined by the CITY) until the damage is repaired or otherwise made whole.
 3. The CONTRACTOR shall submit an overview of the damage survey results including the status of any damage events, within 30 calendar days of the completion of all construction operations.
- F. Damage Inspection Survey:
1. The CONTRACTOR shall perform Damage Inspection surveys to detect any effects resulting from construction operations.
 2. The CONTRACTOR shall submit Damage Inspection survey, photographs, and other finalized data to the CITY
 3. The CITY shall inspect the properties, structures, facilities and utilities after receipt of the report to verify the accuracy of the survey. Florida Department of Transportation (FDOT), Florida Power & Light (FPL) or other property or utility owners may inspect their structures, facilities or utilities. Any damaged areas, which were not specifically identified in the pre-construction survey narrative and photographs, shall be deemed to

have been caused by the construction operations. The CONTRACTOR shall be responsible for required repairs at no additional cost to the CITY.

1.05 QUALIFICATIONS: N/A

1.06 RESPONSIBILITIES:

- A. The CONTRACTOR shall include in its bid consideration in its progress schedule for time it takes to obtain permits, permit revisions and inspections from the issuing entities.
- B. The CONTRACTOR shall obtain copies of all applicable codes, regulations, laws and ordinances and keep them in its on-site project file.

1.07 CERTIFICATIONS AND TESTING: (Not Used)

1.08 INSPECTION COORDINATION: (Not Used)

PART 2 - PRODUCTS

2.01 MATERIALS ENCOUNTERED:

- A. The CONTRACTOR shall ensure in its bid that it has considered all the potential expenses related to the construction required to comply with the industry regulations and with requirements of the plans and specifications.

PART 3 - EXECUTION

3.01 GENERAL:

- A. The CONTRACTOR shall be responsible for any damage to existing properties, utilities, structures, facilities or access roads due to construction activities. The CONTRACTOR shall expediently repair (within 30 days or as directed by the CITY) at no additional expense. Upon the circumstance of damage:
 - 1. The CONTRACTOR shall stop construction operations.
 - 2. The CONTRACTOR shall provide the required damage survey.
 - 3. The CONTRACTOR shall undertake to rectify the damage.
 - 4. The CONTRACTOR shall revise, resubmit, and obtain the CITY acceptance, and any required third-party acceptance, on the appropriate construction methods before any further WORK is undertaken.
- B. The CONTRACTOR shall have the sole responsibility for the safety of all WORK activities including labor, materials handling, shipment, storage, and equipment.
- C. No time extensions will be made, nor will additional compensation be made for delays or other circumstances related to unacceptable WORK.

3.02 SITE PREPARATION:

- A. The CONTRACTOR shall demolish structures and other items as shown on the Drawing and in accordance with SECTION 02050.

END OF SECTION

SECTION 03100 CONCRETE FORMWORK AND ACCESSORIES

PART 1 - GENERAL

1.01 SCOPE:

- A. The CONTRACTOR shall provide all labor, materials, and equipment for the following:
 - 1. Design and construction of all necessary formwork including the required bracing, supports, scaffolding, shoring, and other falsework to produce cast-in-place concrete in the finished structure within the required tolerances for line, grade dimension and detail.
 - 2. Joints in concrete, complete and in place, in accordance with the Contract Documents. Joints in concrete structures shall be the types defined below and will be permitted only where indicated, unless specifically accepted by the CITY.
- B. Related Work Specified Elsewhere:
 - 1. SECTION 01300 – Submittals
 - 2. SECTION 03300 - Cast-in-Place Concrete
 - 3. SECTION 06100 - Rough Carpentry

1.02 APPLICABLE PUBLICATIONS: The following standard specifications shall apply to the WORK of this SECTION:

- A. American Concrete Institute (ACI)
 - 1. ACI 347 - Recommended Practice for Concrete Formwork
 - 2. ACI 117 - Standard Tolerances for Concrete Construction and Materials
- B. American Society of Testing and Materials (ASTM)
 - 1. A775 - Epoxy Coated Reinforcing Steel Bars
 - 2. C920 - Elastomeric Joint Sealant
 - 3. D412 - Standard Test Method for Vulcanized Rubber and Thermoplastic Elastomers - Tension
 - 4. D624 - Standard Test Method for Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomers
 - 5. D638 - Standard Test Method for Tensile Properties of Plastics
 - 6. D746 - Standard Test Method for Brittleness Temperature of Plastics and Elastomers by Impact
 - 7. D747 - Standard Test Method for Apparent Bending Modulus of Plastics by Means of a Cantilever Beam
 - 8. D1056 - Flexible Cellular Materials - Sponge or Expanded Rubber
 - 9. D1752 - Preformed Sponge Rubber and Cork Expansion Joint Fillers for Concrete Paving and Structural Construction
 - 10. D2000 - Standard Classification System for Rubber Products in Automotive Applications
 - 11. D2240 - Standard Test Method for Rubber Property - Durometer Hardness

- 12. D2241 - Poly (Vinyl Chloride) (PVC) Pressure-Rated Pipe (SDR Series)
- C. US Product Standards (PS)
 - 1. PS-1 - Construction and Industrial Plywood for Concrete Forms
 - 2. PS-20 - American Softwood Lumber Standard
- D. NSF International
 - 1. NSF 61 - Drinking Water System Components - Health Effects
- E. United States Army Corps of Engineers (USACE)
 - 1. CRD-C572 - PVC Waterstops
- F. Federal Specifications
 - 1. TT-S-0227 E(3) - Sealing Compound, Elastomeric Type, Multicomponent, for Caulking, Sealing, and Glazing Buildings and Other Structures
- G. Occupational Safety and Health Association (OSHA)
 - 1. CFR Title 29 Part 1926 - Safety and Health Regulations for Construction

1.03 DEFINITIONS:

- A. Construction Joints:
 - 1. When fresh concrete is placed against a hardened concrete surface, the joint between the two pours is called a construction joint. The surface of the first pour may also be required to receive a coating of bond breaker as indicated.
- B. Contraction Joints:
 - 1. Contraction joints are similar to construction joints except that the fresh concrete shall not bond to the hardened surface of the earlier pour, which shall be coated with a bond breaker. In the case of slab reinforcement shall be stopped 4-1/2 inches from the joint, which is provided with a sleeve-type dowel, to allow shrinkage of the concrete of the later pour.
- C. Expansion Joints:
 - 1. To allow the concrete to expand freely, a space is provided between the two pours, and the joint shall be formed as indicated. The space is obtained by placing a filler joint material against the earlier pour, to act as a form for the later pour. Unless otherwise indicated, expansion joints in water bearing members shall be provided with a center-bulb type waterstop as indicated.
 - 2. Premolded expansion joint material shall be installed with the edge at the indicated distance below or back from finished concrete surface, and shall have a slightly tapered, dressed, and oiled wood strip secured to or placed at the edge thereof during concrete placement, which shall later be removed to form space for sealing material.
 - 3. The space so formed shall be filled with a joint sealant material as indicated herein. In order to keep the two walls or slab elements in line the joint shall also be provided with a sleeve-type dowel as indicated.
- D. Control Joints:
 - 1. The function of the control joint is to provide a weaker plane in the concrete, where shrinkage cracks will probably occur. A groove, of the shape and dimensions indicated, is formed or saw-cut in the concrete. This groove is afterward filled with a joint sealant material.

1.04 SUBMITTALS:

- A. Falsework Calculations and Drawings: The CONTRACTOR shall submit calculations and drawings prepared and sealed by a Professional Civil Engineer registered in the State of Florida, which indicate the falsework complies with the requirements of OSHA Title 29, Part 1926.703. The submission of design details and calculations for falsework is for information only.
- B. The plans of falsework proposed to be used shall be in sufficient detail to indicate the general layout, sizes of members, anticipated stresses, grade of materials to be used in the falsework, means of protecting existing construction which supports falsework, and typical soil conditions.
- C. The CONTRACTOR shall submit placement drawings showing the location and type of all joints for each structure.
- D. .
- E. The CONTRACTOR shall submit MANUFACTURER's information demonstrating compliance with requirements for the following:
 - 1. Form ties and related accessories, including taper tie plugs, if taper ties are used
 - 2. Form gaskets
 - 3. Form release agent, including NSF certification if not using mineral oil
 - 4. List of form materials and locations for use
 - 5. Bearing Pads
 - 6. Neoprene Sponge
 - 7. Preformed Joint Filler
 - 8. Backing Rod
 - 9. Bond Breaker
 - 10. Slip Dowels
 - 11. PVC Tubing

1.05 QUALIFICATIONS: N/A

1.06 RESPONSIBILITIES:

- A. The CONTRACTOR is fully responsible for the design and construction of all forms and falsework to be in compliance with all applicable OSHA requirements, and the requirements of all agencies having jurisdiction on the project. The submission of design details and calculations for falsework is for information only.
- B. The CONTRACTOR shall prepare adhesion and cohesion test specimens for construction joint sealant as required herein, at intervals of 5 working days while sealants are being installed.
- C. The sealant material shall show no signs of adhesive or cohesive failure when tested in accordance with the following procedure in laboratory and field tests:
 - 1. Sealant specimen shall be prepared between 2 concrete blocks (1-inch by 2-inch by 3-inch). Spacing between the blocks shall be 1-inch. Coated spacers (2-inch by 1-1/2-inch by 1/2-inch) shall be used to insure sealant cross-sections of 1/2-inch by 2 inches with a width of 1-inch.

2. Sealant shall be cast and cured according to MANUFACTURER's recommendations except that curing period shall be not less than 24 hours.
3. Following curing period, the gap between blocks shall be widened to 1-1/2-inch. Spacers shall be used to maintain this gap for 24 hours prior to inspection for failure.

1.07 CERTIFICATIONS:

- A. Form materials, which may remain or leave residues on or in the concrete, shall be certified as compliant with NSF 61.
- B. Joint materials shall be certified as compliant with NSF 61.
- C. The CONTRACTOR shall submit certified test reports from the sealant MANUFACTURER on the actual batch of material being supplied indicating compliance with requirements herein before the sealant is used on the job.

1.08 INSPECTIONS:

- A. Falsework shall be inspected for conformance with the accepted submittal. No workers will be allowed to use falsework for access and no concrete placement to related forms will be permitted until the falsework is inspected by the CONTRACTOR for conformance with the submittals and appropriately tagged. No variations or alterations to falsework, as compared to the reference submittal, will be allowed without certification of the variation by the original Professional Engineer.

1.09 WARRANTY:

- A. The CONTRACTOR shall warrant the WORK against defects for one year from the date of Substantial Completion and as described in Article 13 of Section 00700 - General Terms and Conditions.

PART 2 - PRODUCTS

2.01 FORM AND FALSEWORK MATERIALS:

- A. Except as otherwise expressly accepted by the CITY, lumber brought on the Site for use as forms, shoring, or bracing shall be new material. Forms shall be smooth surface forms and shall be of the following materials:

Walls - Steel, fiberglass, or plywood panel
Columns - Steel, plywood, PVC, fiberglass, or spiral wound fiber forms
Roof and floor - Plywood
All other work - Steel panels, fiberglass, or plywood

- B. Materials for concrete forms, formwork, and falsework shall conform to the following requirements:

1. Plywood shall be new, waterproof, synthetic resin bonded, exterior type, manufactured especially for concrete formwork and shall conform to Plyform Class I, B-B EXT, of PS-1, and shall be edge sealed.
2. Lumber shall be Douglas Fir or Southern Yellow Pine, construction grade or better, in conformance with PS 20.
3. Form materials shall be metal, wood, plywood, or other material that will not adversely affect the concrete and will facilitate placement of concrete to the shape, form, line, and grade indicated. Metal forms shall accomplish such results. Wood forms for surfaces to be painted shall be Medium Density Overlaid plywood, MDO EXT Grade.

- C. Unless otherwise indicated, exterior corners in concrete members shall be provided with 3/4-inch chamfers or be tooled to 1/2-inch radius. Re-entrant corners in concrete members shall not have fillets unless otherwise indicated.
- D. Forms and falsework to support the roof and floor slabs shall be designed in accordance with ACI 347.

2.02 FORM TIES:

- A. Ties shall be standard crimped snap ties with one-inch (1") snapback. Ties shall be provided with a plastic cone or other suitable means for forming a conical hole to ensure that the form tie may be broken off back of the face of the concrete. The maximum diameter of removable cones for rod ties, or of other removable form-tie fasteners having a circular cross-section, shall not exceed 1-1/2 inches; and all such fasteners shall be such as to leave holes of regular shape for reaming. Form ties for water-retaining structures shall have integral waterstops that tightly fit the form tie so that they cannot be moved from mid-point of the tie.
- B. Removable taper ties may be used when approved by the CITY. A preformed neoprene or polyurethane tapered plug sized to seat at the center of the wall shall be inserted in the hole left by the removal of the taper tie.

2.03 FORM RELEASING AGENT:

- A. Form release agent shall be non-staining and shall leave no residues on or in the concrete unless certified as compliant with NSF 61 and shall not adversely affect the adhesion of paint or other coatings.

2.04

2.04 JOINT MATERIALS:

- A. Bearing Pad: Bearing pad shall be neoprene conforming to ASTM D 2000, BC 420, 40 durometer hardness unless otherwise indicated.
- B. Neoprene Sponge: Sponge shall be neoprene, closed-cell, expanded, conforming to ASTM D 1056, Type 2C5-E1.
- C. Joint Filler
 - 1. Joint filler for expansion joints in waterholding structures shall be neoprene conforming to ASTM D1056, Type 2C5-E1.
 - 2. Joint filler material in other locations shall be of the preformed non-extruding type joint filler constructed of cellular neoprene sponge rubber or polyurethane of firm texture. Bituminous fiber type will not be permitted. All non-extruding and resilient-type preformed expansion joint fillers shall conform to the requirements and tests set forth in ASTM D 1752, for Type I, except as otherwise indicated.

2.05 BACKING ROD:

- A. Backing rod shall be an extruded closed-cell, polyethylene foam rod. The material shall be compatible with the joint sealant material and shall have a tensile strength of not less than 40 psi and a compression deflection of approximately 25 percent at eight (8) psi. The rod shall be 1/8-inch larger in diameter than the joint width except that a one-inch diameter rod shall be used for a 3/4-inch wide joint.

2.06 BOND BREAKER:

- A. Bond breaker shall contain a fugitive dye so that areas of application will be readily distinguishable.

- B. Bonding agent for hydrophilic waterstop shall be the MANUFACTURER's recommended adhesive for wet, rough concrete.

2.07 SLIP DOWELS:

- A. Slip dowels in joints shall be smooth epoxy-coated bars, conforming to ASTM A 775.

2.08 PVC TUBING:

- A. PVC tubing in joints shall be Schedule SDR 13.5, conforming to ASTM D 2241.

2.09 CHAMFER STRIP:

- A. Provide three quarter inch triangular fillets, milled clear straight grained wood, surfaced each side, or extruded vinyl type, with or without nail flange to form all exposed concrete edges such as columns, pilasters, beams, curbs, equipment pads, tops of walls, and as indicated. Unless otherwise indicated, exterior corners in concrete members shall be provided with 3/4" chamfers. Re-entrant corners in concrete members shall not have fillets, unless otherwise indicated.

PART 3 - EXECUTION

3.01 FORMS:

- A. Forms shall conform to the shape, lines, and dimensions as shown on the Drawings and shall be substantial and sufficiently tight to prevent leakage. Forms shall be properly braced or tied so as to maintain position and shape. Plumb and string lines shall be installed before concrete placement and shall be maintained during placement. Such lines shall be used by CONTRACTOR's personnel and by the CITY and shall be in sufficient number and properly installed. During concrete placement, the CONTRACTOR shall continually monitor plumb and string line form positions and immediately correct deficiencies.
- B. The CONTRACTOR shall be fully responsible for the adequacy of the formwork in its entirety and any forms that are unsafe or inadequate in any respect shall promptly be removed from the WORK and replaced. The CONTRACTOR shall provide worker protection from protruding reinforcement bars in accordance with applicable safety codes.
- C. The CONTRACTOR may reuse forms only if in good condition and only if acceptable to the CITY. Reused forms shall be thoroughly cleaned and may require light sanding between uses to obtain a uniform surface texture on all exposed concrete surfaces. Forms shall not be reused if they have developed defects that would affect the surface texture of exposed concrete. Exposed concrete surfaces are defined as surfaces, which are permanently exposed to view. In the case of forms for the inside wall surfaces of hydraulic/water retaining structures, unused tie rod holes in forms shall be covered with metal caps or shall be filled by other methods acceptable to the CITY.
- D. Forms shall be sufficiently tight to prevent leakage. Forms shall be properly braced or tied together to maintain their position and shape under a load of freshly-placed concrete. If adequate foundation for shores cannot be secured, trussed supports shall be provided.
- E. Immediately before the placing of reinforcing, faces of all forms in contact with concrete shall receive a thorough coating of form release agent. Any excess agent shall be satisfactorily removed before placing concrete. If using mineral oil, the CONTRACTOR shall oil the forms at least two weeks in advance of their use. Care shall be exercised to keep oil/release agent off the surfaces of steel reinforcement and other items to be embedded in concrete.

- F. The CONTRACTOR shall supply sufficient number of forms of each kind to permit the required rate of progress to be maintained.
- G. The design and inspection of concrete forms, falsework, and shoring shall comply with applicable local, state, and Federal regulations.

3.02 FORM DESIGN:

- A. Forms shall be true in every respect to the required shape and size, shall conform to the established alignment and grade, and shall be of sufficient strength and rigidity to maintain their position and shape under the loads and operations incident to placing and vibrating the concrete. Suitable and effective means shall be provided on all forms for holding adjacent edges and ends of panels and sections tightly together and in accurate alignment so as to prevent the formation of ridges, fins, offsets, or similar surface defects in the finished concrete.
- B. Plywood, 5/8-inch and greater in thickness, may be fastened directly to studding if the studs are spaced close enough to prevent visible deflection marks in the concrete. The forms shall be tight so as to prevent the loss of water, cement, and fines during placing and vibrating of the concrete. Specifically, the bottom of wall forms that rest on concrete footings or slabs shall be provided with a gasket to prevent loss of fines and paste during placement and vibration of concrete. Such gasket may be a 1- to 1-1/2-inch diameter polyethylene rod held in position to the underside of the wall form.
- C. The CONTRACTOR shall provide adequate clean-out holes at the bottom of each lift of forms. The size, number, and location of such clean-outs shall be as acceptable to the CITY. Whenever concrete cannot be placed from the top of a wall form in a manner that meets the requirements of the Contract Documents, form windows shall be provided in the size and spacing needed to allow placement of concrete to the requirements of SECTION 03300. The size, number, and location of such form windows shall be as acceptable to the CITY.

3.03 FORM CONSTRUCTION:

- A. Vertical Surfaces: All vertical surfaces of concrete members shall be formed, except where placement of the concrete against the ground is indicated. Not less than 1-inch of concrete shall be added to the indicated thickness of a concrete member, where concrete is permitted to be placed against trimmed ground, in lieu of forms. Permission to do this on other concrete members will be granted only for members of comparatively limited height and where the character of the ground is such that it can be trimmed to the required lines and will stand securely without caving or sloughing until the concrete has been placed.
- B. Construction Joints: Concrete construction joints will not be permitted at locations other than those indicated, except as may be acceptable to the CITY. When a second lift is placed on hardened concrete, special precautions shall be taken in the way of the number, location, and tightening of ties at the top of the old lift and bottom of the new to prevent any unsatisfactory effect whatsoever on the concrete. Pipe stubs and anchor bolts shall be set in the forms where required.
- C. Form Ties
 - 1. Embedded Ties: Holes left by the removal of form tie cones shall be reamed with suitable toothed reamers so as to leave the surface of the holes clean and rough before being filled with mortar. Wire ties for holding forms will not be permitted. No form-tying device or part thereof, other than metal, shall be left embedded in the concrete. Ties shall not be removed in such manner as to leave a hole extending through the interior of the concrete members. The use of snap-ties, which cause spalling of the concrete upon form stripping or tie removal, will not be permitted. If steel panel forms are used, rubber grommets shall be provided where the ties pass

through the form in order to prevent loss of cement paste. Where metal rods extending through the concrete are used to support or to strengthen forms, the rods shall remain embedded and shall terminate not less than 1-inch back from the formed face or faces of the concrete.

2. Removable Ties: Where taper ties are approved for use, the larger end of the taper tie shall be on the wet side of walls in water retaining structures. After the taper tie is removed, the hole shall be thoroughly cleaned and roughened for bond. A precast neoprene or polyurethane tapered plug shall be located at the wall centerline. The hole shall be completely filled with non-shrink grout for water bearing and below-grade walls. The hole shall be completely filled with non-shrink or regular cement grout for above-grade walls, which are dry on both sides. Exposed faces of walls shall have the outer 2 inches of the exposed face filled with a cement grout, which shall match the color and texture of the surrounding wall surface.

3.04 REMOVAL OF FORMS:

- A. Careful procedures for the removal of forms shall be strictly followed, and this WORK shall be done with care so as to avoid injury to the concrete or workers. In the case of roof slabs and above-ground floor slabs, forms shall remain in place until test cylinders for the roof concrete attain a minimum compressive strength of 75 percent of the 28-day strength (0.75f_c) in SECTION 03300. No forms shall be disturbed or removed under an individual panel or unit before the concrete in all the adjacent panels or units have attained 0.75f_c strength and have been in place for a minimum of 7 days. The time required to establish said strength shall be determined by the CITY, who will make several test cylinders for this purpose from concrete used in the first group of roof panels placed. If the time so determined is more than the 7-day minimum, then that time shall be used as the minimum length of time. Forms for vertical walls of waterholding structures shall remain in place at least 36 hours after the concrete has been placed.
- B. Forms for parts of the WORK not specifically mentioned herein shall remain in place for periods of time as recommended in ACI 347.

3.05 FALSEWORK:

- A. The CONTRACTOR shall be responsible for the design, engineering, construction, maintenance, and safety of all falsework, including staging, walkways, forms, ladders, and similar appurtenances, which shall equal or exceed the applicable requirements of the provisions of the OSHA Safety and Health Standards for Construction, and the requirements herein.
- B. The CONTRACTOR shall design and construct falsework to provide the necessary rigidity and to support the loads. Falsework for the support of a superstructure shall be designed to support the loads that would be imposed if the entire superstructure were placed at one time.
- C. The CONTRACTOR shall place falsework upon a solid footing, safe against undermining, and protected from softening. When the falsework is supported on timber piles, the maximum calculated pile loading shall be as recommended by the CONTRACTOR's geotechnical engineer and shall not exceed 20 tons. When falsework is supported on any portion of the structure which is already constructed, the load imposed by the falsework shall be spread, distributed, and braced in such a way as to avoid any possibility of damage to the structure.

3.06 TOLERANCES:

- A. The variation from plumb, level and required lines shall not exceed 1/4-inch in any ten feet (10') of length, non cumulative, and there shall be no offsets or visible waviness in the

finished surface. All other tolerances shall be within the tolerances of ACI 117 - Standard Tolerances for Concrete Construction and Materials.

END OF SECTION

SECTION 03200 CONCRETE REINFORCEMENT

PART 1 - GENERAL

1.01 SCOPE:

- A. The CONTRACTOR shall furnish all labor, materials, and equipment to provide and properly place all concrete reinforcement steel, welded wire fabric, couplers, and concrete inserts for use in the reinforced concrete and masonry construction and all appurtenant work, including all the wires, clips, supports, chairs, spacers, and other accessories as shown on the drawings and as specified herein.
 - 1. SECTION 03100 - Concrete Formwork and Accessories
 - 2. SECTION 03300 - Cast-In-Place Concrete
 - 3. DIVISION 3 - Concrete

1.02 APPLICABLE PUBLICATIONS: The most recent revision of the following standard specifications shall apply to the WORK of this SECTION:

- A. American Concrete Institute (ACI):
 - 1. ACI 318 - Building Code Requirements for Reinforced Concrete
 - 2. ACI SP-66 - Detailing Manual
- B. American Society of Testing and Materials (ASTM):
 - 1. ASTM A82 - Standard Specification for Steel Wire, Plain, for Concrete Reinforcement
 - 2. ASTM A185 - Standard Specification for Steel Welded Wire Reinforcement, Plain, for Concrete
 - 3. ASTM A555 – Standard Specification for General Requirements for Stainless Steel Wire and Wire Rods
 - 4. ASTM A615 - Standard Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement
 - 5. ASTM A775 - Standard Specification for Epoxy-Coated Reinforcing Steel Bars
 - 6. ASTM A955/A955M – Standard Specification for Deformed and Plain Stainless-Steel Bars for Concrete Reinforcement
- C. Concrete Reinforcing Steel Institute (CRSI):
 - 1. Recommended Practice for Placing Reinforcing Bars
- D. Florida Building Code, Latest Edition

1.03 DEFINITIONS: (Not Used)

1.04 SUBMITTALS: The CONTRACTOR shall submit the following:

- A. Mill Certifications of Grade 60 reinforcing steel or stainless steel, as required
- B. Complete bar schedule, bar details and erection drawings in conformance with ACI SP-66
- C. Where mechanical couplers are required or permitted to be used to splice reinforcement steel, the CONTRACTOR shall submit manufacturer's literature which contains instructions and recommendations for installation for each type of coupler used; certified test reports

which verify the load capacity of each type and size of coupler used; and Shop Drawings which show the location of each coupler with details of how they are to be installed in the formwork.

D. Mill certificates shall be delivered with each shipment of reinforcing bars.

1.05 QUALIFICATIONS: (Not Used)

1.06 RESPONSIBILITIES:

A. The CONTRACTOR shall perform Pull tests to 50 percent of five percent of drilled dowels, randomly selected by the CITY. If any tested dowels slip or yield, an additional five percent of drilled dowels shall be tested until an entire five percent sample is tested without slipping or yielding.

1.07 FACTORY TESTING:

A. If requested by the CITY, the CONTRACTOR shall provide samples from each heat of reinforcement steel delivered in adequate quantity for testing. The CONTRACTOR shall pay costs of additional tests due to material failing tests.

1.08 CERTIFICATIONS:

A. International Code Council Evaluation Service (ICC-ES) Certifications for mechanical couplers, if allowed

B. Mill Certifications of Grade 60 reinforcing steel

1.09 INSPECTION COORDINATION:

A. The CONTRACTOR shall provide sufficient notice and opportunity to the CITY to review the placement of the reinforcing steel before the concrete is placed. The CONTRACTOR shall provide access to the WORK for the CITY as requested for inspection. The CONTRACTOR shall provide 48 hours advance notice of its intention to begin new WORK activities.

1.10 WARRANTY:

A. The CONTRACTOR shall warrant the WORK against defects for one (1) year from the date of Substantial Completion and as described in Article 13 of Section 00700 - General Terms and Conditions.

PART 2 - PRODUCTS

2.01 REINFORCING BARS:

A. Metal reinforcement shall be deformed type bars conforming to ASTM A615, Specifications for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement, Grade 60, unless otherwise specified. Reinforcing steel shall be fabricated for the shapes and dimensions indicated on the Drawings and in compliance with ACI 318. All bars shall be bent cold.

B. Replace all reinforcement with bends and kinks not shown on fabrication Shop Drawings. Remove from job site all such reinforcing and replace with new fabricated steel. Field bending of reinforcement at the work site is prohibited.

C. Welded wire fabric reinforcement shall conform to the requirements of ASTM A185, and the details indicated. Do not use fabric that has been rolled. Install flat sheets only.

- D. Spiral reinforcement shall be cold-drawn steel wire conforming to the requirements of ASTM A82.
- E. Epoxy coating for reinforcing and accessories, where indicated, shall conform to ASTM A775.
- F. Mechanical couplers shall be provided where indicated and where approved by the CITY. The couplers shall develop a tensile strength that exceeds 125 percent of the yield strength of the reinforcement bars being spliced at each splice. Where the type of coupler used is composed of more than one component, all components required for a complete splice shall be provided. This shall apply to all mechanical splices, including those splices intended for future connections. Reinforcement steel and coupler used shall be compatible for obtaining the required strength of the connection. Straight threaded type couplers shall require the use of the next larger size reinforcing bar or shall be used with reinforcing bars with specially forged ends which provide upset threads which do not decrease the basic cross section of the bar.
- G. Epoxy for grouting reinforcing bars shall be specifically formulated for such application, for the moisture condition, application temperature, and orientation of the hole to be filled. Epoxy grout shall meet the requirements in SECTION 03600.

PART 3 - EXECUTION

3.01 PLACEMENT AND ANCHORAGE:

- A. Bar supports shall be spaced in accordance with CRSI.
 - 1. Reinforcement steel shall be supported by concrete, plastic or metal supports, spacers or metal hangers that are strong and rigid enough to prevent any displacement of the reinforcement steel. Where concrete is to be placed on the ground, supporting concrete blocks (or dobies) shall be used in sufficient numbers to support the bars without settlement, but in no case shall such support be continuous. Concrete blocks used to support reinforcement steel shall be tied to the steel with wire ties that are embedded in the blocks. For concrete over formwork, the CONTRACTOR shall provide concrete, metal, plastic, or other acceptable bar chairs and spacers.
 - 2. Limitations on the use of bar support materials shall be as follows.
 - a. Concrete Dobies: permitted at all locations except where architectural finish is required.
 - b. Wire Bar Supports: permitted only at slabs over dry areas, interior non-hydraulic wall surfaces, and exterior wall surfaces.
 - c. Plastic Bar Supports: permitted at all locations except on grade.
- B. Reinforcement shall be accurately placed in accordance with the Drawings and shall be adequately secured in position with not less than 16-gauge annealed wire. The placement tolerances shall be in accordance with ACI 318, paragraph 7.5, Placing Reinforcement and the CRSI Manual of Standard Practices.
- C. Tie wires shall be bent away from the forms in order to provide the required concrete coverage.
- D. Bars additional to those indicated which may be found necessary or desirable by the CONTRACTOR for the purpose of securing reinforcement in position shall be provided by the CONTRACTOR at its own expense.
- E. Additional reinforcement around openings:

1. Place an equivalent area of steel around pipe or opening and extend on each side and top and bottom sufficiently to develop bond in each bar.
 2. Refer to details on Drawings for bar extension length on each side of opening.
 3. Where welded wire fabrics are used, provide extra reinforcing using fabric or deformed bars.
- F. Unless otherwise indicated, reinforcement placing tolerances shall be within the limits in Section 7.5 of ACI 318 except where in conflict with the requirements of the Building Code.
- G. Bars may be moved as necessary to avoid interference with other reinforcement steel continuously across the entire width of the reinforcement mat and shall support the reinforcement mat in the plane indicated.
- H. Welded wire fabric placed over the ground shall be supported on wired concrete blocks (dobies) spaced not more than three (3) feet on centers in any direction. Welded wire fabric shall not be placed on the ground and hooked into place in the freshly placed concrete.
- I. Epoxy coated reinforcing bars shall be stored, transported, and placed in such a manner as to avoid chipping of the epoxy coating. Non-abrasive slings made of nylon and similar materials shall be used. Specially coated bar supports shall be used. Chips or cracks in the epoxy coating shall be repaired with a compatible epoxy repair material prior to placing concrete, conduits, or embedded items. If bars are moved more than one bar diameter, or enough to exceed the above tolerances, the resulting arrangement of bars shall be as reviewed and accepted by the CITY.
- J. Welded wire fabric reinforcement placed over horizontal forms shall be supported on slab bolsters. Slab bolsters shall be spaced not more than 30 inches on center. The construction practice of placing welded wire fabric on the ground and hooking it into place in the freshly placed concrete shall not be used.
- K. Stainless steel reinforcing bar shall be shipped, handled, and placed such that it does not come into direct contact with carbon steel. Tie wires and bar chairs shall be stainless steel or non-metallic. Nylon, PVC, or polyethylene spacers shall be used where stainless-steel bar must be attached to carbon steel, to maintain a minimum 1-inch clearance.

3.02 CONCRETE COVER:

- A. The concrete cover over reinforcement shall conform to ACI 318, paragraph 7.7, Concrete Protection for Reinforcement, unless otherwise indicated. Tie wires shall be bent away from the forms in order to provide the required concrete coverage.

3.03 SPLICING:

- A. All lap splices of bar reinforcement shall be as indicated and conform to Chapter 12 of ACI 318 or as otherwise approved by the CITY. Unless otherwise indicated, dowels shall match the size and spacing of the spliced bar.
- B. Laps of welded wire fabric shall be in accordance with ACI 318. Adjoining sheets shall be securely tied together with No. 14 tie wire, one tie for each two running feet. Wires shall be staggered and tied in such a manner that they cannot slip.
- C. Splices in column spiral reinforcement, when necessary, shall be made by a lap of 1-1/2 turns.
- D. Reinforcing shall not be straightened or rebend in a manner which will injure the material. Bars shall be bent or straight as indicated. Do not use bends different from the bends indicated. Bars shall be bent cold, unless otherwise permitted by the CITY. No bars partially

embedded in concrete shall be field-bent except as indicated or specifically permitted by the CITY.

- E. Couplers which are located at a joint face shall be a type which can be set either flush or recessed from the face as indicated. The couplers shall be sealed during concrete placement to completely eliminate concrete or cement paste from entering. Couplers intended for future connections shall be recessed a minimum of 1/2 inch from the concrete surface. After the concrete is placed, the coupler shall be plugged with plastic plugs which have an O-ring seal and the recess filled with sealant to prevent any contact with water or other corrosive materials. Threaded couplers shall be plugged.

3.04 CLEANING AND PROTECTION:

- A. Unless indicated otherwise, mechanical coupler spacing, and capacity shall match the spacing and capacity of the reinforcing indicated for the adjacent section.
- B. Reinforcement shall be free of all materials that will reduce bond.
- C. Reinforcement steel shall at all times be protected from conditions conducive to corrosion until concrete is placed around it.
- D. The surfaces of reinforcement steel and other metalwork to be in contact with concrete shall be thoroughly cleaned of all dirt, grease, loose scale and rust, grout, mortar, and other foreign substances immediately before the concrete is placed. Where there is delay in depositing concrete, reinforcement shall be re-inspected and, if necessary, re-cleaned or sandblasted.
- E. Properly cap all vertical reinforcement steel if area is subject to having workers above the reinforcement area.

3.05 INSTALLATION OF DRILLED REINFORCING STEEL DOWELS:

- A. For drilling and grouting information see SECTION 03600.

END OF SECTION

SECTION 03300 CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.01 SCOPE:

- A. The WORK of this SECTION consists of furnishing all labor, equipment, supplies, and materials necessary for the proper placement, curing, finishing, protection, and repair of the cast-in-place concrete required by the Contract Documents.
- B. Related Work Specified Elsewhere:
 - 1. SECTION 01300 – Submittals
 - 2. SECTION 01410 – Testing and Quality Control
 - 3. SECTION 03100 - Concrete Formwork and Accessories
 - 4. SECTION 03200 - Concrete Reinforcement

1.02 APPLICABLE STANDARDS AND PUBLICATIONS:

- A. Standards or Codes: The edition of the standards of the organizations listed below in effect at the time of the advertisement for bids form a part of this specification to the extent referenced. In the case of a conflict between the requirements of this SECTION and those of the listed document, the requirements of this SECTION shall prevail.
 - 1. American Concrete Institute (ACI)
 - a. 117 - Standard Tolerance for Concrete Construction and Materials
 - b. 301 - Structural Concrete for Buildings
 - c. 304.2R - Recommended Practice for Measuring, Mixing, Transporting, and Placing Concrete
 - d. 305 - Committee Report on Hot-Weather Concreting
 - e. 306 - Committee Report on Cold-Weather Concreting
 - f. 308 - Standard Specification for Curing Concrete
 - g. 309 - Consolidation of Concrete
 - h. 318 - Building Code Requirements for Reinforced Concrete
 - i. 350 – Code Requirements for Environmental Engineering Concrete Structures
 - 2. American Society for Testing and Materials (ASTM):
 - a. C31 - Making and Curing Concrete compression and Flexure Test Specimens in the Field
 - b. C33 – Standard Specification for Concrete Aggregates
 - c. C39 - Compressive Strength of Cylindrical Concrete Specimens
 - d. C94 - Standard Specification for Ready-Mixed Concrete
 - e. C127 - Test Method for Specific Gravity and Absorption of Coarse Aggregate
 - f. C128 - Test Method for Specific Gravity and Absorption of Fine Aggregate
 - g. C136 - Method for Sieve Analysis of Fine and Coarse Aggregates
 - h. C143 - Test Method for Slump of Hydraulic Cement Concrete

- i. C150 – Standard Specification for Portland Cement
 - j. C156 - Test Method for Water Retention by Concrete Curing Materials
 - k. C157 - Test Method for Length Change of Hardened Hydraulic Cement Mortar and Concrete
 - l. C173 - Standard Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method
 - m. C231 - Standard Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method
 - n. C260 - Specification for Air Entraining Admixtures for Concrete
 - o. C309 - Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete
 - p. C494 - Standard Specification for Chemical Admixtures for Concrete
 - q. C566 - Test Method for Total Moisture Content of Aggregate by Drying
 - r. C618 - Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use as a Mineral Admixture in Concrete
 - s. C881 - Standard Specification for Epoxy-Resin-Base Bonding Systems for Concrete
 - t. C1077 - Practice for Laboratories Testing Concrete and Concrete Aggregates for use in Construction and Criteria for Laboratory Evaluation
 - u. C1157 – Performance Specification for Hydraulic Cements
 - v. C1240 - Standard Specification for Silica Fume for Use as a Mineral Admixture in Hydraulic-Cement Concrete, Mortar, and Grout
 - w. D1751 - Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types)
 - x. D2419 - Test Methods for Sand Equivalent Value of Soils and Fine Aggregate
 - y. E96 - Standard Specification for Water Vapor Transmission of Materials
 - z. E1643 - Standard Practice for Installation of Water Vapor Retarders Used in Contact with Earth or Granular Fill Under Concrete Slabs
3. Federal Specifications
 - a. UU-B-790A - Building Paper, Vegetable Fiber (Kraft, Waterproofed, Water Repellant and Fire Resistant)
 4. Florida Building Code and Local Building Codes as appropriate
 5. Florida Department of Transportation (FDOT)
 - a. Standard Specifications for Road and Bridge Construction, latest edition.

1.03 DEFINITIONS:

- A. Structural Concrete: Concrete to be used in all cases except where indicated otherwise in the Contract Documents.
- B. Sitework Concrete: Concrete to be used for curbs, gutters, catch basins, sidewalks, pavements, fence and guard post embedment, underground pipe encasement, underground duct bank encasement and all other concrete appurtenant to electrical facilities unless otherwise indicated.

- C. Lean Concrete: Concrete to be used for thrust blocks, pipe trench cut-off blocks and cradles that are indicated on the Drawings as unreinforced. Lean concrete shall be used as protective cover for dowels intended for future connection.
- D. Hydraulic Structure: A concrete structure for the containment, treatment, or transmission of water, wastewater, other fluids, or gases.

1.04 SUBMITTALS:

A. Mix Designs:

- 1. Prior to beginning the WORK and within 14 days after issuance of the Notice to Proceed, the CONTRACTOR shall submit preliminary concrete mix designs which shall show the proportions and gradations of all materials proposed for each class and type of concrete. Mix designs shall be tested by an independent testing laboratory acceptable to the CITY. All costs related to such testing shall be CONTRACTOR'S responsibility.
- 2. Test data relating to the cement, aggregate, and admixtures shall be less than six months old. Furnish the submittals in accordance with ACI 301 for the following:
 - a. Mill tests for cement
 - b. Admixture certification. Chloride ion content shall be included.
 - c. Aggregate gradation test results and certification
- 3. Where ready-mix concrete is used, the CONTRACTOR shall furnish delivery tickets at the time of delivery of each load of concrete. Each ticket shall show the state certified equipment used for measuring and the total quantities, by weight, of cement, sand, each class of aggregate, admixtures, and the amounts of water in the aggregate added at the batching plant, and the amount allowed to be added at the Site for the specific design mix. In addition, each ticket shall state the mix number, total yield in cubic yards, and the time of day, to the nearest minute, corresponding to the times when the batch was dispatched, when it left the plant, when it arrived at the Site, when unloading began, and when unloading was finished.

B. Other

- 1. The CONTRACTOR shall submit materials and methods for curing.
- 2. The CONTRACTOR shall submit product specifications, data, and installation instructions for all miscellaneous products called for in this specification.

1.05 QUALIFICATIONS:

- A. Truck mixers shall be equipped with electrically actuated counters by which the number of revolutions of the drum or blades may be readily verified. The counter shall be of the resettable, recording type, and shall be mounted in the driver's cab. The counters shall be actuated at the time of starting mixers at mixing speeds.

1.06 RESPONSIBILITIES: (not used)

1.07 CERTIFICATIONS AND TESTING:

A. General

- 1. Concrete and other materials for testing shall be furnished by the CONTRACTOR, and the CONTRACTOR shall assist the CITY in obtaining samples, and disposal and cleanup of excess material.
- 2. The testing laboratory will meet or exceed the requirements of ASTM C1077.

3. The cost of trial batch, laboratory, and shrinkage tests on cement, aggregates, and concrete, will be the CONTRACTOR'S responsibility.

B. Trial Batch and Laboratory Tests

1. Tests for determining slump shall be in accordance with the requirements of ASTM C143.
2. Testing for aggregate shall include sand equivalence, reactivity, organic impurities, abrasion resistance, and soundness, according to ASTM C33.
3. A testing laboratory approved by the CITY shall prepare a trial batch of each class of concrete, based on the preliminary concrete mixes submitted by the CONTRACTOR. During the trial batch the aggregate proportions may be adjusted by the testing laboratory using the two coarse aggregate size ranges to obtain the required properties. If one size range produces an acceptable mix, a second size range need not be used. Such adjustments will be considered refinements to the mix design and will not be the basis for extra compensation to the CONTRACTOR. Concrete shall conform to the requirements of this SECTION, whether the aggregate proportions are from the CONTRACTOR'S preliminary mix design, or whether the proportions have been adjusted during the trial batch process. The trial batch shall be prepared using the aggregates, cement, and admixture proposed for the Project. The trial batch materials shall be of a quantity such that the testing laboratory can obtain 3 drying shrinkage, and 6 compression test specimens from each batch.
4. The determination of compressive strength shall be made in accordance with ACI 318, Section 5.3.
5. A sieve analysis of the combined aggregate for each trial batch shall be performed according to the requirements of ASTM C136. Values shall be given for percent passing each sieve.

C. Field Tests

1. The responsibility to retain the services of an independent testing laboratory shall be as defined in SECTION 01410.
2. The CONTRACTOR shall pay the cost of any additional tests and investigation on WORK that does not meet the specifications.
3. Tests on pumped concrete shall be taken at the point of final placement.
4. Compressive Test: Compressive test specimens shall be taken during construction from the first placement of each class of concrete placed each day.
 - a. Each set of test specimens shall consist of five (5) cylinders. Specimens shall be made in accordance with ASTM C31. Specimens shall be 6-inch diameter by 12-inch high cylinders.
 - b. Compression tests shall be performed in accordance with ASTM C39. Two (2) cylinders shall be broken at seven (7) days and two (2) at 28 days, and the remaining cylinder shall be held to verify test results, if needed.
 - c. The acceptance of the test results shall be the average of the strengths of the two specimens tested at 28 days as per ACI 318. Evaluation and acceptance of the concrete shall be per ACI 318, Chapter 5.
5. Slump Tests: One (1) slump test shall be taken per truckload in accordance with ASTM C143.

6. Air Content: Air content shall be determined for each compressive test taken in accordance with ASTM C231 or by ASTM C173.
7. Aggregate testing shall be made every twelve (12) months during construction to insure continued compliance with these Specifications.
8. Concrete that fails to meet the ACI requirements and these Specifications is subject to removal and replacement.
9. Temperature: Concrete temperature shall be recorded in accordance with ASTM C1064.
- 10.

1.08 CONCRETE CONFERENCE:

- A. A meeting to review the detailed requirements of the CONTRACTOR'S proposed concrete design mixes and to determine the procedures for producing proper concrete construction shall be held no later than 14 days after the Notice to Proceed.
- B. All parties involved in the concrete WORK shall attend the conference, including the following at a minimum:
 1. CONTRACTOR'S representative
 2. Testing laboratory representative
 3. Concrete subcontractor
 4. Reinforcing steel subcontractor and detailer
 5. Concrete supplier
 6. Admixture MANUFACTURER's representative
- C. The conference shall be held at a mutually agreed upon time and place. The CITY shall be notified no less than 5 days prior to the date of the conference]

1.09 WARRANTY:

- A. The CONTRACTOR shall warrant the WORK against defects for one year from the date of Substantial Completion and as described in the General Terms and Conditions.

PART 2 - MATERIALS

2.01 GENERAL:

- A. All materials shall be classified as acceptable for potable water use according to NSF Standard 61.
- B. Cement for concrete that will contact potable water shall not be obtained from kilns that burn metal rich hazardous waste fuel.
- C. Materials shall be delivered, stored, and handled so as to prevent damage by water or breakage. Cement reclaimed from cleaning bags or leaking containers shall not be used. Cement shall be used in the sequence of receipt of shipments.
- D. Materials shall comply with the requirements of Sections 201, 203, and 204 of ACI 301, as applicable.

E. Storage of materials shall conform to the requirements of Section 205 of ACI 301.

2.02 CEMENT:

- A. Cement shall be standard Portland Cement Type II conforming to ASTM C150 and C1157
- B. A minimum of 85 percent of cement by weight shall pass a 325 screen.
- C. A single brand of cement shall be used throughout the WORK, and prior to its use, the brand shall be accepted by the CITY
- D. Sacked cement shall be stored in such a manner so as to permit access for inspection and sampling. Certified mill test reports, including fineness, for each shipment of cement to be used shall be submitted to the CITY, if requested, regarding compliance with these Specifications.

2.03 AGGREGATES:

- A. Aggregates shall be obtained from pits acceptable to the CITY, shall be non-reactive, and shall conform to the requirements of ASTM C33.
- B. When tested in accordance with ASTM C33, the loss resulting after five (5) cycles of the soundness test, shall not exceed ten (10) percent for fine aggregate and twelve (12) percent for coarse aggregate, when using sodium sulfate.
- C. When tested in accordance with ASTM C33, the ratio of silica released to reduction in alkalinity shall not exceed 1.0.
- D. Coarse Aggregates:
 - 1. Coarse aggregates shall be crushed stone, gravel or other approved inert material having clean, hard, durable, uncoated particles conforming to ASTM C33.
 - 2. The coarse aggregates shall be prepared and handled in two (2) or more size groups for combined aggregates with a maximum size greater than 3/4-inch. When the aggregates are proportioned for each batch of concrete, the 2 size groups shall be combined.
 - 3. When tested in accordance with ASTM C33, the coarse aggregate shall show a loss not exceeding 42 percent after 500 revolutions, or 10.5 percent after 100 revolutions.
- E. Fine Aggregates:
 - 1. Fine aggregates shall be clean sand conforming to ASTM C33.
 - 2. When tested in accordance with ASTM D2419, the sand equivalency shall not be less than 75 percent for an average of three (3) samples, nor less than 70 percent for an individual test. Gradation of fine aggregate shall conform to ASTM C33 when tested in accordance with ASTM C136 for the fineness modulus of the sand used, including the optional grading in Section 6.2. The fineness modulus of sand used shall not be over 3.1.
 - 3. When tested in accordance with ASTM C33, the fine aggregate shall produce a color in the supernatant liquid no darker than the reference standard color solution.

2.04 WATER:

- A. The water used in the concrete mix and for curing shall be clean, potable, and in accordance with ACI 318. Water shall be free from objectionable quantities of silty organic matter, alkali, salts, and other impurities.

- B. The water shall be considered potable, for the purposes of this SECTION only, if it meets the requirements of the local governmental agencies. Agricultural water with high total dissolved solids (over 1000 mg/l TDS) shall not be used.

2.05 ADMIXTURES:

- A. General: All admixtures shall be compatible and be furnished by a single MANUFACTURER capable of providing qualified field service representation. Admixtures shall be used in accordance with MANUFACTURER's recommendations. If the use of an admixture is producing an inferior end result, the CONTRACTOR shall discontinue use of the admixture. Admixtures shall not contain thiocyanates or more than 0.05 percent chloride ion, and shall be non-toxic after 30 days.
- B. Air Entraining Admixtures:
 - 1. Air entraining admixture shall conform to ASTM C260. Air content shall be tested at the point of placement.
 - 2. The air-entraining agent shall be added to the batch in a portion of the mixing water. The solution shall be batched by means of a mechanical batcher capable of accurate measurement.
 - 3. Sufficient air-entraining agent shall be used to provide a total air content of 3 percent. Concrete floors to receive a shake-on floor hardener shall have an air content not to exceed three (3) percent or as recommended by the hardener MANUFACTURER.
- C. Set Controlling and Water Reducing Admixtures:
 - 1. Admixtures may be added at the CONTRACTOR'S option, subject to the CITY approval, to control the set, effect water reduction, and increase workability. The cost of adding an admixture shall be the CONTRACTOR'S responsibility. Concrete containing an admixture shall be first placed at a location determined by the CITY. Admixtures shall conform to the requirements of ASTM C494. The required quantity of cement shall be used in the mix regardless of whether or not an admixture is used.
 - 2. Concrete shall not contain more than one water-reducing admixture.
 - 3. Set retarding admixture may be either with or without water-reducing properties. Where the air temperature at the time of placement is expected to be consistently greater than 80 degrees F, a set retarding admixture shall be used. Set retarding admixture shall conform to ASTM C494 Type B or D.
 - 4. Set accelerating admixture may be either with or without water-reducing properties. Where the air temperature at the time of placement is expected to be consistently less than 40 degrees F, a non-corrosive set accelerating admixture shall be used. Set accelerating admixture shall conform to ASTM C494 Type C or E.
 - 5. Normal range water reducer shall conform to ASTM C494, Type A. The quantity of admixture used and the method of mixing shall be in accordance with the MANUFACTURER's instructions and recommendations.
 - 6. High range water reducer shall conform to ASTM C494, Type F or G. High range water reducer shall be added to the concrete after all other ingredients have been mixed and initial slump has been verified. No more than fourteen (14) ounces of water reducer per sack of cement shall be used. Water reducer shall be considered as part of the mixing water when calculating the water/cement ratio.
 - a. If the high range water reducer is added to the concrete at the Site, it may be used in conjunction with the same water reducer added at the batch plant. Concrete shall have a slump of three (3) inches plus or minus 1/2-inch prior to adding the high range water reducing admixture at the Site. The high range

water reducing admixture shall be accurately measured and pressure injected into the mixer as a single dose by an experienced technician. A standby system shall be provided and tested prior to each day's operation of the primary system.

- b. Concrete shall be mixed at mixing speed for a minimum of 70 mixer revolutions or five (5) minutes after the addition of the high range water reducer, unless recommended otherwise by the MANUFACTURER.

F. CURING MATERIALS:

- D. Curing compound shall conform to ASTM C309, Type I. Curing compound shall be white pigmented, resin based and compliant with local VOC requirements. When curing compound must be removed for finishes or grouting, it shall be of a dissipating type. Sodium silicate compounds shall not be allowed.
- E. Polyethylene sheet for use as concrete curing blanket shall be white and shall have a nominal thickness of 6 mils. The loss of moisture when determined in accordance with the requirements of ASTM C156, shall not exceed 0.055 grams per square centimeter of surface.
- F. Polyethylene-coated waterproof paper sheeting for use as concrete curing blanket shall consist of white polyethylene sheeting free of visible defects, uniform in appearance, have a minimum thickness of two (2) mils, and be permanently bonded to waterproof paper conforming to the requirements of Federal Specification UU-B-790A. The loss of moisture, when determined in accordance with the requirements of ASTM C156, shall not exceed 0.055 gram per square centimeter of surface.
- G. Polyethylene-coated burlap for use as concrete curing blanket shall be minimum 4-mil thick, white opaque polyethylene film impregnated or extruded into one side of the burlap. Burlap shall weigh not less than 9 ounces per square yard. The loss of moisture, when determined in accordance with the requirements of ASTM C156, shall not exceed 0.055 grams per square centimeter of surface.
- H. Curing mats for use in Curing Method 6 below, shall be heavy shag rugs or carpets or cotton mats quilted at 4-inches on center. Curing mats shall weigh a minimum of twelve (12) ounces per square yard when dry.

2.06 MISCELLANEOUS MATERIALS:

- A. Damp proofing agent shall be an asphalt emulsion conforming to ASTM D1227, Type III, Class 1.
- B. Evaporation retardant shall create a monomolecular film on the concrete. The retardant shall have no effect on cement hydration and shall meet local VOC requirements. Evaporation retardant shall not affect adhesion of curing compounds or other treatments and shall not affect the color of the concrete.
- C. Reinforcement shall be per SECTION 03200.
- D. Damp proofing agent shall be a waterborne emulsified-asphalt. Damp proofing shall be suitable for "green" or slightly damp surfaces and shall withstand normal expansion and contraction of the concrete. Damp proofing agent shall breath to allow vapors to escape. Damp proofing agent shall meet local VOC requirements.
- E. Bonding agents shall be 100% solids, epoxy adhesives conforming to the following:
 - 1. For bonding freshly-mixed, plastic concrete to hardened concrete, bonding agent shall be a medium viscosity adhesive conforming to ASTM C881 Type II, Grade 2, Class C,
 - 2. For bonding hardened concrete or masonry to steel, bonding agent shall be a non-sagging gel adhesive conforming to ASTM C881 Type I or IV, Grade 3, Class C.

F. Vapor Barrier:

1. of 10 mil Polyethylene with 6 in min. wide Z-Lock Type Lapping. Visqueen or approved equal. Vapor Barrier shall be installed under concrete slabs of all habitable spaces. Barrier shall be installed per the MANUFACTURER recommendations and per ASTM E1643.

G. Non-Waterstop Joint Material:

1. Preformed Joint Material: Preformed asphalt-impregnated fiber conforming to ASTM D1751.
2. Bond Breaker: All bond breakers shall be roofing felt or 15 mils minimum dry film thickness of bituminous paint as indicated.

2.07 CONCRETE DESIGN REQUIREMENTS:

A. General: Concrete shall be composed of cement, admixtures, aggregates, and water of the qualities indicated. The exact proportions in which these materials are to be used for different parts of the WORK will be determined during the trial batch process. In general, the mix shall be designed to produce a concrete capable of being deposited so as to obtain maximum density and minimum shrinkage, and, where deposited in forms, to have good consolidation properties and maximum smoothness of surface. The aggregate gradations shall be formulated to provide fresh concrete that will not promote rock pockets around reinforcing steel or embedded items. The proportions shall be changed whenever necessary or desirable to meet the required results. All changes shall be subject to review by the CITY.

B. Fine Aggregate Composition:

1. In mix designs for structural concrete, the percentage of fine aggregate in total aggregate by weight shall be as indicated in the following table.

Fine Aggregate	
Fineness Modulus	Maximum Percent
2.7 or less	41
2.7 to 2.8	42
2.8 to 2.9	43
2.9 to 3.1	44

2. For other concrete, the maximum percentage of fine aggregate of total aggregate, by weight, shall not exceed 50.

C. Duct bank concrete shall contain an integral red-oxide coloring pigment. Concrete shall be dyed red throughout. Surface treatment to color duct banks will not be acceptable.

D. Water/Cement Ratio and Compressive Strength:

1. Water/cement ratio is given for aggregates in saturated-surface dry condition, and total moisture of all aggregates, calculated by ASTM C566, less the absorption of the aggregate as calculated by ASTM C127 and C128, shall represent total free moisture in the aggregate to determine the water/cement ratio. Total free moisture of aggregates shall be added to batch water to estimate water content of concrete. Concrete shall have the following minimum properties:

E. Concrete Proportions:

Type of Work	Min 28-Day Compressive Strength (psi)	Maximum Size Aggregate (in)	* Content per cubic yd (lbs)	* Maximum W/C Ratio (by weight)
Structural Concrete				
Roof, floor slabs, columns, walls, and all other concrete items not indicated elsewhere.	4500	1	564 to 600	0.45
Sitework concrete	3,000	1	470 (min)	0.50
Lean concrete	2,000	1	376 (min)	0.60

* The cement content and water cement ratio are based on total cementitious material including silica fume, slag or fly ash.

NOTE: The CONTRACTOR is cautioned that the limiting parameters above are not a mix design. Admixtures may be required to achieve workability required by the CONTRACTOR'S construction methods and aggregates. The CONTRACTOR is responsible for providing concrete with the required workability and strength.

- F. Adjustments to Mix Design: The CONTRACTOR may elect to decrease the water/cement ratio to achieve the strength and shrinkage requirements and/or add water reducers, as required to achieve workability. The mixes shall be changed whenever such change is necessary or desirable to secure the required strength, density, workability, and surface finish, and the CONTRACTOR shall be entitled to no additional compensation because of such changes. Any changes to the accepted concrete mix design shall be submitted to the CITY for review and shall be tested again in accordance with these Specifications.
- G. When using a floor hardener, the water/cement ratio shall not be greater than specified by the hardener MANUFACTURER.

2.08 CONSISTENCY:

- A. The quantity of water in a batch of concrete shall be just sufficient, with a normal mixing period, to produce a concrete which can be worked properly into place without segregation and which can be compacted by vibratory methods to give the desired density, impermeability, and smoothness of surface. The quantity of water shall be changed as necessary, with variations in the nature or moisture content of the aggregates, to maintain uniform production of a desired consistency. The consistency of the concrete in successive batches shall be determined by slump tests in accordance with ASTM C143. The slumps shall be as follows:

Part of Work	Slump (in)
All concrete, unless indicated otherwise	3-inches plus or minus 1-inch
With high range water reducer added	7-inches plus or minus 2-inches

2.09 MEASUREMENT:

- A. The amount of cement and of each separate size of aggregate entering into each batch of concrete shall be determined by direct weighing equipment furnished by the CONTRACTOR and acceptable to the CITY.

B. Weighing tolerances:

Material	Percent of Total Weight
Cement	1
Aggregates	3
Admixtures	3

- C. The quantity of water entering the mixer shall be measured by a suitable water meter or other measuring device of a type acceptable to the CITY and capable of measuring the water in variable amounts within a tolerance of one percent. The water feed control mechanism shall be capable of being locked in position so as to deliver constantly any required amount of water to each batch of concrete. A positive quick-acting valve shall be used for a cut-off in the water line to the mixer. The operating mechanism shall prevent leakage when the valves are closed.

PART 3 - EXECUTION

3.01 PROPORTIONING AND MIXING:

- A. Proportioning of the mix shall conform to the requirements of Chapter 3 "Proportioning" of ACI 301.
- B. Mixing shall conform to the requirements of Chapter 7 of ACI 301.
- C. Slumps shall be as indicated herein.
- D. Retendering of concrete or mortar that has partially hardened shall not be permitted.

3.02 PREPARATION OF SURFACES FOR CONCRETING:

- A. General: Earth surfaces shall be thoroughly wetted by sprinkling prior to the placing of any concrete, and these surfaces shall be kept moist by frequent sprinkling up to the time of placing concrete thereon. The surface shall be free from standing water, mud, and debris at the time of placing concrete.
- B. Joints in Concrete:
 - 1. All joints shall be installed where indicated on the Drawings or where otherwise approved by the CITY. The surface of the construction joint shall be rough and prior to placement shall be cleaned and moistened with water.
 - 2. Concrete surfaces upon or against which new concrete is to be placed, where the placement of the concrete has been stopped or interrupted so that, as determined by the CITY, the new concrete cannot be incorporated integrally with that previously placed, are defined as construction joints. The surfaces of horizontal joints shall be given a compacted, roughened surface for good bonding. Except where the Drawings call for joint surfaces to be coated, the joint surfaces shall be cleaned of all laitance, loose or defective concrete, foreign material, and be roughened to a minimum 1/4-inch amplitude. Such cleaning and roughening shall be accomplished by hydro blasting, sandblasting or chipping (exposing aggregate) followed by thorough washing. Pools of water shall be removed from the surface of construction joints before the new concrete is placed.
 - 3. After the surfaces have been prepared, all approximately horizontal construction joints shall be covered with a 6-inch lift of a pea gravel mix. The mix shall be placed and spread uniformly. Wall concrete shall follow immediately and shall be placed upon the fresh pea gravel mix. If high range water reducer is used in the wall concrete, then the pea gravel joint topping does not need to be used.

- C. **Placing Interruptions:** When placing of concrete is to be interrupted long enough for the concrete to take a set, the working face shall be given a shape by the use of forms or other means that will secure proper union with subsequent work; provided that construction joints shall be made only where acceptable to the CITY.
- D. **Embedded Items:**
1. No concrete shall be placed until all formwork, installation of parts to be embedded, reinforcement steel, and preparation of surfaces involved in the placing have been completed and accepted by the CITY at least 4 hours before placement of concrete. Surfaces of forms and embedded items that have become encrusted with dried grout from previous usage shall be cleaned before the surrounding or adjacent concrete is placed.
 2. Inserts or other embedded items shall conform to the requirements herein.
 3. Reinforcement, anchor bolts, sleeves, inserts, and similar items shall be set and secured in the forms at locations indicated on the Drawings or shown by Shop Drawings and shall be acceptable to the CITY before any concrete is placed. Accuracy of placement is the responsibility of the CONTRACTOR.
- E. **Placing New Concrete Against Old:** Where new concrete is to be placed against old concrete (any concrete which is greater than 60 days of age), the surface of the old concrete shall be thoroughly cleaned and roughened by hydro blasting, sandblasting or chipping to expose aggregate. The joint surface shall be coated with an epoxy bonding agent unless indicated otherwise by the CITY.
- F. No concrete shall be placed in any structure until all water entering the space to be filled with concrete has been properly cut off or has been diverted by pipes, or other means, and carried out of the forms, clear of the WORK. No concrete shall be deposited underwater nor shall the CONTRACTOR allow still water to rise on any concrete until the concrete has attained its initial set. Water shall not be permitted to flow over the surface of any concrete in such manner and at such velocity as will injure the surface finish of the concrete. Pumping or other necessary dewatering operations for removing ground water, if required, shall be the CONTRACTOR's responsibility and shall be subject to the review of the CITY.
- G. **Corrosion Protection:** Pipe, conduit, dowels, and other ferrous items required to be embedded in concrete construction shall be so positioned and supported prior to placement of concrete that there will be a minimum of 2-inches clearance between said items and any part of the concrete reinforcement. Securing such items in position by wiring or welding them to the reinforcement will not be permitted.
- H. Openings for pipes, inserts for pipe hangers and brackets, and anchors shall, where practicable, be provided during the placing of concrete.
- I. Anchor bolts shall be accurately set and shall be maintained in position by templates while being embedded in concrete.
- J. **Cleaning:** The surfaces of metalwork to be in contact with concrete shall be thoroughly cleaned of all dirt, grease, loose scale and rust, grout, mortar, and other foreign substances immediately before the concrete is placed.

3.03 CONVEYING:

- A. Concrete shall be conveyed from the mixer to the place of final deposit by methods that will prevent separation or loss of material.
- B. No aluminum materials shall be used in conveying any concrete.
- C. Ends of chutes, hopper gates, and all other points of concrete discharge throughout the CONTRACTOR'S conveying, hoisting, and placing system shall be designed and arranged so that concrete passing from them will not fall separated into whatever receptacle immediately receives it. Conveyor belts, if used, shall be of a type acceptable to the CITY. Chutes longer than 50 feet will not be permitted. Minimum slopes of chutes shall be such that concrete of the indicated consistency will readily flow in them. If a conveyor belt is used, it shall be wiped clean by a device operated in such a manner that none of the mortar adhering to the belt will be wasted. All conveyor belts and chutes shall be covered.
- D. Pumping:
 - 1. If the pumped concrete does not produce satisfactory end results, the CONTRACTOR shall discontinue the pumping operation and proceed with the placing of concrete using conventional methods.
 - 2. The pumping equipment shall have two (2) cylinders and be designed to operate with one cylinder in case the other one is not functioning. In lieu of this requirement, the CONTRACTOR may have a standby pump on the Site during pumping.
 - 3. The minimum diameter of the hose conduits shall be in accordance with ACI 304.
 - 4. Pumping equipment and hose conduits that are not functioning properly shall be replaced.
 - 5. Aluminum conduits for conveying the concrete shall not be permitted.
 - 6. Concrete samples for slump, air content, and test cylinders will be taken at the placement end of the hose.

3.04 DELIVERY:

- A. Ready-mixed concrete shall be batched, mixed, transported and delivered in accordance with these specifications and ASTM C94 including the following supplementary requirements.
 - 1. Concrete shall be discharged within **1-1/2** hours from the time concrete was mixed, if centrally mixed, or from the time the original water was added, if transit-mixed, or before the drum has been revolved **300** revolutions, whichever is first.
 - 2. Truck mixers and their operation shall be such that the concrete throughout the mixed batch as discharged is within acceptable limits of uniformity with respect to consistency, mix, and grading. If slump tests taken at approximately the 1/4 and 3/4 points of the load during discharge give slumps differing by more than one-inch when the required slump is 3-inches or less, or if they differ by more than 2-inches when the required slump is more than 3-inches, the mixer shall not be used on the WORK unless the causative condition is corrected and satisfactory performance is verified by additional slump tests. Mechanical details of the mixer, such as water measuring and discharge apparatus, condition of the blades, speed of rotation, general mechanical condition of the unit, and clearance of the drum, shall be checked before a further attempt to use the unit will be permitted.
 - 3. The use of non-agitating equipment for transporting ready-mixed concrete will not be permitted. The quality and quantity of materials used in ready-mixed concrete and in batch aggregates shall be subject to continuous inspection at the batching plant by the CITY.

4. Each batch of concrete shall be mixed in a truck mixer for not less than 70 revolutions of the drum or blades at the rate of rotation designated by the MANUFACTURER of equipment. Additional mixing, if any, shall be at the speed designated by the MANUFACTURER of the equipment as agitating speed. All materials including mixing water shall be in the mixer drum before actuating the revolution counter for determining the number of revolution of mixing.

3.05 PLACING:

- A. Non-Conforming Work or Materials: Concrete which during or before placing is found not to conform to the requirements indicated herein shall be rejected and immediately removed from the WORK. Concrete which is not placed in accordance with these Specifications, or which is of inferior quality, shall be removed and replaced.
- B. Unauthorized Placement: No concrete shall be placed except in the presence of a duly authorized representative of the CITY. The CONTRACTOR shall notify the CITY in writing at least 24 hours in advance of placement of any concrete.
- C. Concrete shall not be dropped more than four feet (4') without use of chutes or tremies. Concreting shall be a continuous operation until placement of the section is complete. All concrete shall be worked around reinforcement and embedded items. If vibrators are used, care shall be taken not to segregate concrete. Vibrators will not be allowed to move concrete within the form. All forms and subgrade shall be dampened prior to placement and excess water removed.
- D. Placing of concrete shall conform to the applicable requirements of Chapter 8 of ACI 301 and the requirements of this SECTION.
- E. Placement in Slabs: Concrete placed in sloping slabs shall proceed uniformly from the bottom of the slab to the top, for the full width of the placement. As the WORK progresses, the concrete shall be vibrated and carefully worked around the slab reinforcement, and the surface of the slab shall be screeded in an up-slope direction.
- F. Concrete shall not be dropped through reinforcement steel or into any deep form, nor shall concrete be placed in any form in such a manner as to leave accumulation of mortar on the form surfaces above the placed concrete. In such cases, means such as hoppers and, if necessary, vertical ducts of canvas, rubber, or metal shall be used for placing concrete in the forms in a manner that it may reach the place of final deposit without separation. Concrete shall be uniformly distributed during the process of depositing and in no case after depositing shall any portion be displaced in the forms more than 6-feet in horizontal direction. Concrete in wall forms shall be deposited in uniform horizontal layers not deeper than 2-feet; and care shall be taken to avoid inclined layers or inclined construction joints except where such are required for sloping members. Each layer shall be placed while the previous layer is still soft. The rate of placing concrete in wall forms shall not exceed 5-feet of vertical rise per hour. Sufficient illumination shall be provided in the interior of all forms so that the concrete at the places of deposit is visible from the deck or runway.
- G. Concrete with hardener shall be placed per the hardener MANUFACTURERs written recommendations.
- H. Placing New Concrete Against Old: Epoxy adhesive bonding agent shall be applied to the old surfaces according to the MANUFACTURER's written recommendations. This provision shall not apply to joints where waterstop is provided, see SECTION 03100.
- I. Temperature of Concrete: The temperature of concrete when it is being placed shall be not more than 90 degrees F or less than 55 degrees F for sections less than 12-inches thick, nor less than 50 degrees for all other sections. The CONTRACTOR shall be entitled to no additional compensation on account of the temperature requirements.

J. Hot Weather Placement

1. Placement of concrete in hot weather shall conform to ACI 305 and the following:
2. When the temperature of the concrete is 85 degrees F or above, the time between the introduction of the cement to the aggregates and discharge shall not exceed [60] minutes.
3. If concrete is placed when the weather is such that the temperature of the concrete would exceed 90 degrees F, the CONTRACTOR shall employ effective means, such as pre-cooling of aggregates and mixing water using ice or placing at night, as necessary to maintain the temperature of the concrete below 90 degrees F as it is placed.

K. Cold Weather Placement

1. Placement of concrete in cold weather shall conform to ACI 306.1, and the following:
2. Concrete ingredients shall not be heated to a temperature higher than that necessary to keep the temperature of the mixed concrete, as placed, from falling below the minimum temperature.
3. Remove all ice and frost from the surfaces, including reinforcement, against which concrete is to be placed. Before beginning concrete placement, thaw the subgrade to a minimum depth of 6-inches. Reinforcement and embedded items shall be warmed to above 32 degrees F prior to concrete placement.
4. Maintain the concrete temperature above 50 degrees F for at least 72 hours after placement.

L. Order of Placing Concrete

1. The order of placing concrete in all parts of the WORK shall be acceptable to the CITY. In order to minimize the effects of shrinkage, the concrete shall be placed in units as bounded by construction joints at the indicated locations. The placing of units shall be done by placing alternate units in a manner such that each unit placed shall have cured at least five (5) days for hydraulic structures and two (2) days for all other structures before the contiguous unit or units are placed, except that the corner sections of vertical walls shall not be placed until the two (2) adjacent wall panels have cured at least ten (10) days for hydraulic structures and 4 days for all other structures.
2. The surface of the concrete shall be level whenever a run of concrete is stopped. To insure a level, straight joint on the exposed surface of walls, a wood strip at least 3/4-inch thick shall be tacked to the forms on these surfaces. The concrete shall be carried about 1/2-inch above the underside of the strip. About one hour after the concrete is placed, the strip shall be removed and any irregularities in the edge formed by the strip shall be leveled with a trowel and laitance shall be removed.

3.06 TAMPING AND VIBRATING:

- A. As concrete is placed in the forms or in excavations, it shall be thoroughly settled and compacted throughout the entire depth of the layer which is being consolidated, into a dense, homogeneous mass, filling all corners and angles, thoroughly embedding the reinforcement, eliminating rock pockets, and bringing only a slight excess of water to the exposed surface of concrete. Vibrators shall be Group 3 per ACI 309, high speed power vibrators (8,000 to 12,000 rpm) of an immersion type in sufficient number and with at least one standby unit as required. Group 2 vibrators may be used only at specific locations when accepted by the CITY.
- B. Care shall be used in placing concrete around waterstops. The concrete shall be carefully worked by rodding and vibrating to make sure that all air and rock pockets have been

eliminated. Where flat-strip type waterstops are placed horizontally, the concrete shall be worked under the waterstops by hand, making sure that air and rock pockets have been eliminated. Concrete surrounding the waterstops shall be given additional vibration over and above that used for adjacent concrete placement to assure complete embedment of the waterstops in the concrete.

- C. Concrete in walls shall be internally vibrated and at the same time rammed, stirred, or worked with suitable appliances, tamping bars, shovels, or forked tools until it completely fills the forms or excavations and closes snugly against all surfaces. Subsequent layers of concrete shall not be placed until the layers previously placed have been worked thoroughly. Vibrators shall be provided in sufficient numbers, with standby units as required, to accomplish the required results within 15 minutes after concrete of the prescribed consistency is placed in the forms. The vibrating head shall not contact the surfaces of the forms. Care shall be taken not to vibrate concrete excessively or to work it in any manner that causes segregation of its constituents.

3.07 **CURING AND DAMPPROOFING:** Concrete shall be cured for a minimum of five (5) days after placement in accordance with the methods indicated below for the different parts of the WORK.

Surface to be Cured or Dampproofed	Method
Unstripped forms	1
Wall sections with forms removed	6
Construction joints between footings and walls, and between floor slab and columns	2
Encasement and duct bank concrete and thrust blocks	3
All concrete surfaces not specifically indicated in this Paragraph	4
Floor slabs on grade in hydraulic structures	5
Slabs on grade to receive an adhered floor finish	6 (Omit curing compound)
Slabs not on grade	6

- A. Method 1: Wooden forms shall be wetted immediately after concrete has been placed and shall be kept wet with water until removal. If steel forms are used the exposed concrete surfaces shall be kept continuously wet until the forms are removed. If forms are removed within 7 days of placing the concrete, curing shall be continued in accordance with Method 6 below.
- B. Method 2: The surface shall be covered with burlap mats which shall be kept wet with water for the duration of the curing period, until the concrete in the walls has been placed. No curing compound shall be applied to surfaces cured under Method 2.
- C. Method 3: The surface shall be covered with moist earth not less than 4 hours or more than 24 hours after the concrete is placed. Earthwork operations that may damage the concrete shall not begin until at least 7 days after placement of concrete.
- D. Method 4: The surface shall be sprayed with a liquid curing compound.
 - 1. It shall be applied in accordance with the MANUFACTURER's printed instructions at a maximum coverage rate of 200 square feet per gallon and in such a manner as to cover the surface with a uniform film that will seal thoroughly.

2. Where the curing compound method is used, care shall be exercised to avoid damage to the seal during the 7-day curing period. If the seal is damaged or broken before the expiration of the curing period, the break shall be repaired immediately by the application of additional curing compound over the damaged portion.
3. Wherever curing compound has been applied by mistake to surfaces against which concrete subsequently is to be placed and to which it is to adhere, compound shall be entirely removed by wet sandblasting just prior to the placing of new concrete.
4. Curing compound shall be applied as soon as the concrete has hardened enough to prevent marring on unformed surfaces and within two (2) hours after removal of forms. Repairs to formed surfaces shall be made within the two (2) hour period; provided, however, that any such repairs which cannot be made within the said two (2) hour period shall be delayed until after the curing compound has been applied. When repairs are to be made to an area on which curing compound has been applied, the area involved shall first be wet-sandblasted to remove the curing compound.
5. At locations where concrete is placed adjacent to a panel which has been coated with curing compound, the panel shall have curing compound reapplied to an area within 6-feet of the joint and to any other location where the curing membrane has been disturbed.
6. Prior to final acceptance of the WORK, all visible traces of curing compound shall be removed from all surfaces in such a manner that does not damage the surface finish.

E. Method 5:

1. Until the concrete surface is covered with curing compound, the entire surface shall be kept damp by applying water using nozzles that atomize the flow so that the surface is not marred or washed. The concrete shall be given a coat of curing compound in accordance with Method 4 above. Not less than one hour or more than four (4) hours after the curing compound has been applied, the surface shall be wetted with water delivered through a fog nozzle, and concrete-curing blankets shall be placed on the slabs. The curing blankets shall be polyethylene sheet, polyethylene-coated waterproof paper sheeting, or polyethylene-coated burlap. The blankets shall be laid with the edges butted together and with the joints between strips sealed with 2-inch wide strips of sealing tape or with edges lapped not less than 3-inches and fastened together with a waterproof cement to form a continuous watertight joint.
2. The curing blankets shall be left in place during the 7-day curing period and shall not be removed until after concrete for adjacent work has been placed. If the curing blankets become torn or otherwise ineffective, the CONTRACTOR shall replace damaged sections. During the first three (3) days of the curing period, no traffic of any nature and no depositing, temporary or otherwise, of any materials shall be permitted on the curing blankets. During the remainder of the curing period, foot traffic and temporary depositing of materials that impose light pressure will be permitted only on top of plywood sheets 5/8-inch minimum thickness, laid over the curing blanket. The CONTRACTOR shall add water under the curing blanket as often as necessary to maintain damp concrete surfaces at all times.

F. Method 6: This method applies to both walls and slabs.

1. The concrete shall be kept continuously wet by the application of water for a minimum period of at least seven (7) consecutive days beginning immediately after the concrete has reached final set or forms have been removed.
2. Until the concrete surface is covered with the curing medium, the entire surface shall be kept damp by applying water using nozzles that atomize the flow so that the surface is not marred or washed.

3. Heavy curing mats shall be used as a curing medium to retain the moisture during the curing period. The curing medium shall be weighted or otherwise held substantially in contact with the concrete surface to prevent being dislodged by wind or any other causes. Edges shall be continuously held in place.
4. The curing blankets and concrete shall be kept continuously wet by the use of sprinklers or other means both during and after normal working hours.
5. Immediately after the application of water has terminated at the end of the curing period, the curing medium shall be removed, the entire concrete surface shall be wetted, and curing compound shall be immediately applied to the entire surface in accordance with Method 4 above.
6. The CONTRACTOR shall dispose of excess water from the curing operation to avoid damage to the WORK.

G. Damp proofing

1. The exterior surfaces of backfilled dry well walls and buried roof slabs shall be damp proofed as follows.
2. Immediately after completion of curing the surface shall be sprayed with a damp proofing agent consisting of an asphalt emulsion. Application shall be in 2 coats. The first coat shall be diluted to one-half strength by the addition of water and shall be sprayed on so as to provide a maximum coverage rate of 100 square feet per gallon of dilute solution. The second coat shall consist of an application of the undiluted material, and shall be sprayed on so as to provide a maximum coverage rate of 100 square feet per gallon. Damp proofing material shall be as indicated above.
3. As soon as the material has taken an initial set, the entire area thus coated shall be coated with whitewash. Any formula for mixing the whitewash may be used if it produces a uniformly coated white surface and remains until placing of the backfill. If the whitewash fails to remain on the surface until the backfill is placed, the CONTRACTOR shall apply additional whitewash.

3.08 CONCRETE FINISHES:

- A. General: Surfaces shall be free from fins, bulges, ridges, offsets, honeycombing, or roughness of any kind, and shall present a finished, smooth, continuous hard surface. Allowable deviations from plumb or level and from the alignment, profiles, and dimensions indicated are defined as tolerances and are indicated herein. These tolerances are to be distinguished from irregularities in finish as described herein. Aluminum finishing tools shall not be used.
- B. Formed Surfaces:
 1. No treatment is required after form removal except for curing, repair of defective concrete, and treatment of surface defects. Where architectural finish is required, it shall be as indicated.

C. Unformed Surfaces:

<p>After proper and adequate vibration and tamping, unformed top surfaces of slabs, floors, walls, and curbs shall be brought to a uniform surface with suitable tools. Immediately after the concrete has been screeded, it shall be treated with a liquid evaporation retardant. The retardant shall be used again after each WORK operation as necessary to prevent drying shrinkage cracks. The classes of finish for unformed concrete surfaces are designated and defined as follows: Unformed Surface Finish Schedule</p>	
Area	Finish
Grade slabs and foundations to be covered with concrete or fill material	U1
Floors to be covered with grouted tile or topping grout	U2
Water bearing slabs with slopes 10 percent and less	U3
Water bearing slabs with slopes greater than 10 percent	U4
Slabs not water bearing	U4
Slabs to be covered with built-up roofing	U2
Interior slabs and floors to receive architectural finish	U3
Top surface of walls subject to foot traffic	U4
Top surface of walls not subject to foot traffic	U3
Floors to receive surface hardener	U5

1. Finish U1 - Sufficient leveling and screeding to produce an even, uniform surface with surface irregularities not to exceed 3/8-inch. No further special finish is required.
2. Finish U2 - (Float Finish)
 - a. Compact, accurately screed and float to a true uniform surface.
 - b. Surfaces shall be floated with wood or metal floats or a finishing machine using float blades. Excessive floating of surfaces while the concrete is plastic and dusting of dry cement and sand on the concrete surface to absorb excess moisture will not be permitted.
 - c. Floating shall be the minimum necessary to produce a surface that is free from screed marks and is uniform in texture. Test surface with straightedge and eliminate high and low spots of more than 1/8 inch in ten (10) feet. Surface irregularities shall not exceed 1/4-inch.
 - d. Joints and edges shall be tooled where indicated or as determined by the CITY.
3. Finish U3 - (Hand-Troweled Finish)
 - a. Finish surface as in Finish U2 - Float Finish and after the surface has hardened sufficiently to prevent excess of fine material from being drawn to the surface, trowel with steel trowel to obtain a smooth dense finish after concrete has hardened to ring under the trowel.
 - b. The finish shall produce a smooth dense uniform surface free of all irregularities, blemishes, ripples, and trowel marks.
4. Finish U4 - (Nonskid Finish)
 - a. Trowel the Finish U3 - Hand-trowel Finish surface to remove local depressions or high points. In addition, the surface shall be given a light broom finish with brooming perpendicular to drainage unless otherwise indicated.
 - b. The resulting surface shall be rough enough to provide a nonskid finish.

5. Finish U5 - (Surface hardener)
 - a. Immediately after screeding, shake on hardener shall be applied per the MANUFACTURER's written recommendations.
 - b. Surface shall receive a minimum of two coats of a liquid hardener per the MANUFACTURER's written recommendations.
 - c. CONTRACTOR shall notify hardener MANUFACTURER three (3) working days prior to hardened concrete floor being placed.
 - d. Hardener MANUFACTURER shall provide continuous supervision of concrete and hardener placements, supplying CITY with a report of each day's placement. Cost of supervision is to be borne by CONTRACTOR.

3.09 ARCHITECTURAL FINISH:

- A. General: Architectural finishes shall be provided only where specifically indicated below. In all other locations, the paragraph entitled Concrete Finishes shall apply.

Location	Finish
All formed and unformed surfaces above grade and exposed to view	U5 / Same as Existing

- B. Immediately after the forms have been stripped, the concrete surface shall be inspected and any poor joints, voids, rock pockets, or other defective areas shall be repaired and form-tie holes filled as indicated herein.
- C. Architectural finishes shall not be applied until the concrete surface has been repaired as required and the concrete has cured at least 14 days.
- D. Architecturally treated concrete surfaces shall conform to the accepted sample in texture, color, and quality. It shall be the CONTRACTOR'S responsibility to maintain and protect the concrete finish.

3.10 PROTECTION:

- A. The CONTRACTOR shall protect concrete against damage until final acceptance.
- B. Fresh concrete shall be protected from damage due to rain, hail, sleet, or snow. The CONTRACTOR shall provide such protection while the concrete is still plastic and whenever precipitation is imminent or occurring.

3.11 DEFECTIVE SURFACE TREATMENTS:

- A. Patching Concrete:
 1. Patch all tie holes, honeycombs or other defects with a Portland Cement and sand grout.
 2. Defective surfaces to be repaired shall be cut back from trueline a minimum depth of 1/2-inch over the entire area. Feathered edges will not be permitted. Where chipping or cutting tools are not required in order to deepen the area properly, the surface shall be prepared for bonding by the removal of all laitance or soft material, plus not less than 1/32-inch depth of the surface film from all hard portions by means of an efficient sandblast.
 3. After cutting and sandblasting, the surface shall be wetted sufficiently in advance of shooting with cement mortar so that while the repair material is being applied, the surfaces underneath will remain moist but not so wet as to overcome the suction upon which a good bond depends.

4. Holes left by tie-rod cones shall be reamed with suitable toothed reamers so as to leave the surfaces of the holes clean and rough. Holes then shall be repaired in an approved manner with dry-packed cement grout. Holes left by form-tying devices having a rectangular cross-section and other imperfections having a depth greater than their least surface dimension shall not be reamed but shall be repaired in an approved manner with dry-packed cement grout.
5. The grout shall not be richer than one (1) part cement and three (3) parts sand with the amount of mixing water enough to produce a workable mix. For exposed walls, the cement shall contain such a proportion of white Portland cement as is required to make the color of the patch match the color of the surrounding concrete. The patch shall be finished in such a manner as to match the adjoining surfaces.
6. Surfaces of repairs shall receive the same kind and amount of curing treatment as required for the concrete in the repaired section.

B. Defective Concrete:

1. Any concrete which is not formed as shown on the Drawings or does not conform to the Contract tolerances or shows defects which reduce its structural adequacy, shall be removed from the job by the CONTRACTOR at his expense unless the CITY grants written permission to patch the defective area.

C. Exposed Concrete Surfaces:

1. As soon as forms are removed, exposed surfaces shall be carefully examined and all ridges, ribs and other imperfections shall be rubbed with an abrasive stone or ground in a satisfactory manner in order to secure a smooth, uniform and continuous surface. Plastering or coating of surfaces to be smoothed will not be permitted
2. No repairs shall be made until after inspection by the CITY.
3. In no case will extensive patching of honeycombed concrete be permitted
4. Concrete containing minor voids, pinholes, honeycombing, or similar depression defects shall be repaired as indicated below.
5. Concrete containing extensive voids, holes, honeycombing, or similar depression defects shall be completely removed and replaced. Repairs and replacements shall be performed promptly.

3.12 REINFORCEMENT:

- A. Reinforcement shall be in accordance with SECTION 03200, of these Specifications. Concrete protection for the reinforcement shall conform to the requirements ACI 318, paragraph 7.7.1.

3.13 CONSTRUCTION TOLERANCES:

- A. The CONTRACTOR shall set and maintain concrete forms and perform finishing operations to ensure that the completed WORK is within tolerances. Surface defects and irregularities are defined as finishes and are to be distinguished from tolerances. Tolerance is the permissible variation from lines, grades, or dimensions indicated on the Drawings. Where tolerances are not stated in the specifications, permissible deviations will be in accordance with ACI 117.
- B. The following non-cumulative construction tolerances apply to finished walls and slab unless otherwise indicated:

Item	Tolerance
Variation of the constructed linear outline from the	In 10-feet: 1/4-inch;

established position in plan.	In 20-feet or more: 1/2-inch
Variation from the level or from the grades indicated.	In 10-feet: 1/4-inch; In 20-feet or more: 1/2-inch
Variation from plumb	In 10-feet: 1/4-inch; In 20-feet or more: 1/2-inch
Variation in the thickness of slabs and walls.	Minus 1/4-inch; Plus 1/2-inch
Variation in the locations and sizes of slabs and wall openings	Plus or minus 1/4-inch

3.14 CARE AND REPAIR OF CONCRETE:

- A. The CONTRACTOR shall protect concrete against injury or damage from excessive heat, lack of moisture, overstress, or any other cause until final acceptance. Particular care shall be taken to prevent the drying of concrete and to avoid roughening or otherwise damaging the surface. Any concrete found to be damaged, or which may have been originally defective, or which becomes defective at any time prior to the final acceptance of the completed WORK, or which departs from the established line or grade, or which, for any other reason, does not conform to the requirements of the Contract Documents, shall be satisfactorily repaired or removed and replaced with acceptable concrete.

END OF SECTION

SECTION 03312 SELF-CONSOLIDATING CONCRETE (SCC)

PART 1 - GENERAL

1.01 SCOPE:

- A. Summary of Work: The WORK of this SECTION specifies materials and procedures for producing Self-Consolidating Concrete (SCC) required by the Contract Documents.
- B. Related Work Specified Elsewhere:
 - 1. SECTION 01300 – Submittals
 - 2. SECTION 01410 – Testing and Quality Control
 - 3. SECTION 03100 - Concrete Formwork and Accessories
 - 4. SECTION 03200 - Concrete Reinforcement
 - 5. SECTION 03300 - Cast-In-Place Concrete
 - 6. SECTION 03600 – Grout

1.02 APPLICABLE STANDARDS AND PUBLICATIONS:

- A. Standards or Codes: The edition of the standards of the organizations listed below in effect at the time of the advertisement for bids form a part of this specification to the extent referenced. In the case of a conflict between the requirements of this SECTION and those of the listed document, the requirements of this SECTION shall prevail.
 - 1. American Concrete Institute (ACI)
 - a. 117 - Specification for Tolerances for Concrete Construction and Materials
 - b. 237R – Self-Consolidating Concrete
 - c. 301 – Specification for Structural Concrete for Buildings
 - d. 304.2R - Recommended Practice for Measuring, Mixing, Transporting, and Placing Concrete
 - e. 305 - Committee Report on Hot-Weather Concreting
 - f. 306 - Committee Report on Cold-Weather Concreting
 - g. 308 - Standard Practice for Curing Concrete
 - h. 309 – Guide for Consolidation of Concrete
 - i. 318 - Building Code Requirements for Reinforced Concrete
 - j. 350 – Code Requirements for Environmental Engineering Concrete Structures
 - 2. American Society for Testing and Materials (ASTM):
 - a. A820 - Standard Specification for Steel Fibers for Fiber-Reinforced Concrete
 - b. C31 - Making and Curing Concrete compression and Flexure Test Specimens in the Field
 - c. C33 – Standard Specification for Concrete Aggregates
 - d. C39 – Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens
 - e. C70 - Standard Test Method for Surface Moisture in Fine Aggregate

- f. C94 – Standard Specification for Ready-Mixed Concrete
- g. C127 – Standard Test Method for Relative Density (Specific Gravity) and Absorption of Coarse Aggregate
- h. C128 – Standard Test Method for Relative Density (Specific Gravity) and Absorption of Fine Aggregate
- i. C136 – Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates
- j. C138 - Standard Test Method for Density (Unit Weight), Yield, and Air Content (Gravimetric) of Concrete
- k. C143 -Standard Test Method for Slump of Hydraulic Cement Concrete
- l. C150 – Standard Specification for Portland Cement
- m. C156 – Standard Test Method for Water Retention by Concrete Curing Materials
- n. C157 – Standard Test Method for Length Change of Hardened Hydraulic Cement Mortar and Concrete
- o. C172 - Standard Practice for Sampling Freshly Mixed Concrete
- p. C173 - Standard Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method
- q. C231 - Standard Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method
- r. C260 – Standard Specification for Air Entraining Admixtures for Concrete
- s. C309 – Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete
- t. C494 – Standard Specification for Chemical Admixtures for Concrete
- u. C566 – Standard Test Method for Total Moisture Content of Aggregate by Drying
- v. C618 - Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use as a Mineral Admixture in Concrete
- w. C881 - Standard Specification for Epoxy-Resin-Base Bonding Systems for Concrete
- x. C989 - Standard Specification for Slag Cement for Use in Concrete and Mortars
- y. C1017 - Standard Specification for Chemical Admixtures for Use in Producing Flowing Concrete
- z. C1064 - Standard Test Method for Temperature of Freshly Mixed
- aa. C1077 - Practice for Laboratories Testing Concrete and Concrete Aggregates for use in Construction and Criteria for Laboratory Evaluation
- bb. C1116 - Standard Specification for Fiber-Reinforced Concrete
- cc. C1157 – Standard Performance Specification for Hydraulic Cements
- dd. C1240 - Standard Specification for Silica Fume for Use as a Mineral Admixture in Hydraulic-Cement Concrete, Mortar, and Grout
- ee. C1550 - Standard Test Method for Flexural Toughness of Fiber Reinforced Concrete (Using Centrally Loaded Round Panel)
- ff. C1579 - Standard Test Method for Evaluating Plastic Shrinkage Cracking of Restrained Fiber Reinforced Concrete (Using a Steel Form Insert)

- gg. C1582 - Standard Specification for Admixtures to Inhibit Chloride Induced Corrosion of Reinforcing Steel in Concrete
 - hh. C1585 - Standard Test Method for Measurement of Rate of Absorption of Water by Hydraulic-Cement Concretes
 - ii. C1602 - Standard Specification for Mixing Water Used in the Production of Hydraulic Cement Concrete
 - jj. C1609 - Standard Test Method for Flexural Performance of Fiber- Reinforced Concrete (Using Beam With Third-Point Loading)
 - kk. C1610 - Standard Test Method for Static Segregation of Self- Consolidating Concrete Using Column Technique
 - ll. C1611 - Standard Test Method for Slump Flow of Self-Consolidating Concrete
 - mm. C1621 - Standard Test Method for Passing Ability of Self- Consolidating Concrete by J-Ring
 - nn. D1751 - Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types)
 - oo. D1227 - Standard Specification for Emulsified Asphalt Used as a Protective Coating for Roofing
 - pp. D2419 – Standard Test Method for Sand Equivalent Value of Soils and Fine Aggregate
 - qq. E96 – Standard Test Methods for Water Vapor Transmission of Materials
 - rr. E329 - Standard Specification for Agencies Engaged in Construction, Inspection, Testing or Special Inspection
 - ss. E1643 - Standard Practice for Installation of Water Vapor Retarders Used in Contact with Earth or Granular Fill Under Concrete Slabs
 - tt. F1869 - Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride
3. DIN (Deutsches Institut Fur Normung, Germany)
 - a. DIN 1048 Part 5 "Testing Concrete - Testing of hardened concrete (specimens prepared in mould)"
 4. Federal Specifications
 - a. UU-B-790A - Building Paper, Vegetable Fiber (Kraft, Waterproofed, Water Repellant and Fire Resistant)
 5. Florida Building Code and Local Building Codes as appropriate
 6. Florida Department of Transportation Standard Specifications for Road and Bridge Construction, Latest Edition
- B. National Sanitation Foundation International/American National Standards Institute (NSF/ANSI)
1. 61 - Drinking Water System Components - Health Effects

1.03 DEFINITIONS:

- A. Structural Concrete: Concrete to be used in all cases except where indicated otherwise in the Drawings.

- B. Structural Silica Fume Concrete: Silica Fume Concrete shall contain a Silica Fume Admixture per the MANUFACTURER's recommendations.
- C. Structural Chloride Resistant Concrete: Chloride Resistant Concrete shall contain a Corrosion Inhibitor per the MANUFACTURER's recommendations.
- D. Hydraulic Structure: An environmental engineering concrete structure for the containment, treatment, or transmission of water, wastewater, other fluids, or gases.
- E. Self-Consolidating Concrete (SCC): A highly flowable, non-segregating concrete that can spread into place, fill the formwork, and encapsulate the reinforcement without any mechanical consolidation.
- F. Passing Ability: The ability of SCC to flow under its own weight (without vibration) and fill completely all spaces within intricate formwork, containing obstacles, such as reinforcement.
- G. J-Ring Test: Test used to determine the passing ability of SSC, or the degree to which the passage of SCC through the bars of the J-Ring apparatus is restricted.
- H. J-Ring Flow: The distance of lateral flow of SCC using the J-Ring in combination with a slump cone.
- I. Slump Flow: Test method used to measure the unconfined flow and stability of SCC using a slump cone (upright or inverted).
- J. Slump Flow Spread: The numerical value in inches of flow determined as the average diameter of the circular deposit of SCC at the conclusion of the slump flow test.
- K. T₅₀ Value: Time (in seconds) the edge of the SCC mass takes to reach 20-inch diameter from the time the mold is first raised in the slump flow test.
- L. Stability: The ability of a concrete mixture to resist segregation of the paste from the aggregates.
- M. Static Segregation (Segregation Factor): Segregation of the mortar from the coarse aggregate that occurs after placement while the concrete is still in a plastic state.
- N. Visual Stability Index (VSI) Rating: An assessment of the homogeneity of SCC based on the visual inspection of the SCC sample at the end of the slump flow test.

1.04 SUBMITTALS:

- A. Submittals shall be in accordance with SECTION 01300.
- B. The CONTRACTOR shall submit signed and sealed design Shop Drawings and calculations for the formwork and shoring required for pumping SCC. The submittal shall be signed and sealed by a Professional Engineer, licensed in the State of Florida.
- C. The CONTRACTOR shall submit the Producer's Quality Control Plan and the CONTRACTOR's Quality Control Plan.
- D. Mix Designs:
 - 1. Prior to beginning the WORK and within 14 days of the Notice to Proceed, the CONTRACTOR shall submit preliminary SCC mix designs which shall show the proportions and gradations of all materials proposed for each class and type of concrete. Mix designs shall be checked by an independent testing laboratory conforming to the requirements of ASTM E329 and acceptable to the CITY. All costs related to such checking shall be CONTRACTOR's responsibility.

2. Prepare a trial batch in accordance with the proposed batching sequence and mixing time that are included in the Producer's Quality Control Plan. The CONTRACTOR shall notify the CITY at least three (3) working days prior to preparing the trial batch.
 3. The Producer's Quality Control Plan shall include the following, at a minimum:
 - a. Description of the mix design qualification process if the anticipated placing temperature will be below or above 85 degrees Fahrenheit (F).
 - b. SCC batching sequence, mixing methods and duration, and delivery.
 - c. The proposed sources of SCC materials ingredients.
 - d. The proposed inspection and test methods for the laboratory trial batches.
 - e. The frequency and test methods of the aggregate moisture content tests.
 - f. The qualification and experience of the personnel performing the required mixing, delivery, and testing of the SCC.
 4. Test data from trial batch relating to the cement, aggregate, and admixtures shall be furnished in accordance with ACI 301 for the following:
 - a. Mixture proportions
 - b. Mill tests for cement
 - c. Admixture certification. Chloride ion content shall be included.
 - d. Aggregate gradation test results and certification
 - e. Certification: MANUFACTURER's certification stating that the products delivered meet or exceed Project Specifications.
 - f. Product data
 - g. Delivery Tickets
 5. Where ready-mix SCC is used, the CONTRACTOR shall furnish delivery tickets at the time of delivery of each load of SCC. Ready-mixed SCC truck driver shall provide batch ticket to the CITY at the time of SCC delivery. Contents of the batch ticket shall be as specified in ASTM C94. Each ticket shall show the state certified equipment used for measuring and the total quantities, by weight, of cement, sand, each class of aggregate, admixtures, and the amounts of water in the aggregate added at the batching plant. Water shall not be added to re-temper the SCC. In addition, each ticket shall state the mix number, total yield in cubic yards, and the time of day, to the nearest minute, corresponding to the times when the batch was dispatched, when it left the plant, when it arrived at the Site, when unloading began, and when unloading was finished.
- E. Other
1. The CONTRACTOR shall submit materials and methods for curing.
 2. The CONTRACTOR shall submit product specifications, data, and installation instructions for all miscellaneous products called for in this SECTION.

1.05 QUALIFICATIONS:

- A. Truck mixers shall be equipped with electrically actuated counters by which the number of revolutions of the drum or blades may be readily verified. The counter shall be of the resettable, recording type, and shall be mounted in the driver's cab. The counters shall be actuated at the time of starting mixers at mixing speeds.

- B. The CONTRACTOR shall have a minimum of five (5) years experience in placing self-consolidating concrete for repair and construction of vertical walls, columns and horizontal beams.

1.06 RESPONSIBILITIES: (Not Applicable)

1.07 CERTIFICATIONS AND TESTING:

A. General:

- 1. SCC and other materials for testing shall be furnished by the CONTRACTOR, and the CONTRACTOR shall assist the CITY in obtaining samples, and disposal and cleanup of excess material.
- 2. The testing laboratory shall meet or exceed the requirements of ASTM C1077.
- 3. The cost of trial batch, laboratory, and shrinkage tests on cement, aggregates, and SCC, shall be the CONTRACTOR's responsibility.

B. Trial Batch and Laboratory Tests:

- 1. Tests for determining slump flow shall be in accordance with the requirements of ASTM C1611.
- 2. Testing for aggregate shall include sand equivalence, reactivity, organic impurities, abrasion resistance, and soundness, according to ASTM C33.
- 3. A testing laboratory approved by the CITY shall prepare a trial batch of each class of SCC, based on the preliminary concrete mixes submitted by the CONTRACTOR. During the trial batch the aggregate proportions may be adjusted by the testing laboratory using the two (2) coarse aggregate size ranges to obtain the required properties. If one size range produces an acceptable mix, a second size range need not be used. Such adjustments will be considered refinements to the mix design and shall not be the basis for extra compensation to the CONTRACTOR. SCC shall conform to the requirements of this SECTION, whether the aggregate proportions are from the CONTRACTOR's preliminary mix design, or whether the proportions have been adjusted during the trial batch process. The trial batch shall be prepared using the aggregates, cement, and admixture proposed for the Project. The trial batch materials shall be of a quantity such that the testing laboratory can obtain three (3) drying shrinkage, and six (6) compression test specimens from each batch.
- 4. The determination of compressive strength shall be made in accordance with ACI 318, Section 5.3.
- 5. A sieve analysis of the combined aggregate for each trial batch shall be performed according to the requirements of ASTM C136. Values shall be given for percent (%) passing each sieve.

C. Field Tests:

- 1. The responsibility to retain the services of an independent testing laboratory shall be as defined in SECTION 01410.
- 2. The CONTRACTOR shall pay the cost of any additional tests and investigation on WORK that does not meet the specifications.
- 3. Tests on pumped SCC shall be taken at the point of final placement.
- 4. Compressive Test:
 - a. Compressive test specimens shall be taken during construction from the first placement of each class of SCC placed each day and for each 150 cubic yards or fraction thereof each day.

- b. Each set of test specimens shall consist of five (5) cylinders. Specimens shall be made in accordance with ASTM C31. Specimens shall be 6-inch diameter by 12-inch high cylinders.
 - c. Compression tests shall be performed in accordance with ASTM C39. Two (2) cylinders shall be broken at seven (7) days and two (2) at 28 days, and the remaining cylinder shall be held to verify test results, if needed.
 - d. The acceptance of the test results shall be the average of the strengths of the two (2) specimens tested at 28 days as per ACI 318. Evaluation and acceptance of the SCC shall be per ACI 318, Chapter 5.
5. Slump Flow Tests: One (1) slump test shall be taken per truckload in accordance with ASTM C1611.
 6. Air Content: Air content shall be determined for each compressive test taken in accordance with ASTM C231 or by ASTM C173.
 7. Aggregate testing shall be made every 12 months during construction to insure continued compliance with these Specifications.
 8. Concrete that fails to meet the ACI requirements and these Specifications is subject to removal and replacement.
 9. Temperature: SCC temperature shall be recorded in accordance with ASTM C1064.
 10. J-Ring Test and J-Ring Flow: Testing shall be in accordance with ASTM C1621.

1.08 SELF-CONSOLIDATING CONCRETE CONFERENCE:

- A. A meeting to review the detailed requirements of the CONTRACTOR's proposed self-consolidating concrete design mixes and to determine the procedures for producing proper SCC construction shall be held no later than 14 days after the Notice to Proceed.
- B. All parties involved in the SCC work shall attend the conference, including the following at a minimum:
 1. CONTRACTOR's representative
 2. Testing laboratory representative
 3. SCC subcontractor
 4. Reinforcing steel subcontractor and detailer
 5. SCC supplier
 6. Admixture MANUFACTURER's representative
- C. The conference shall be held at a mutually agreed upon time and place. The CITY shall be notified no less than five (5) days prior to the date of the conference.

1.09 WARRANTY: The CONTRACTOR shall warrant the WORK against defects for one (1) year from the date of Substantial Completion and as described in the General Terms and Conditions.

PART 2 - MATERIALS

2.01 GENERAL:

- A. All materials shall be classified as acceptable for potable water use according to NSF Standard 61.

- B. Cement for SCC that will contact potable water shall not be obtained from kilns that burn metal rich hazardous waste fuel.
- C. Materials shall be delivered, stored, and handled so as to prevent damage by water or breakage. Cement reclaimed from cleaning bags or leaking containers shall not be used. Cement shall be used in the sequence of receipt of shipments.
- D. Materials shall comply with the requirements of ACI 301, as applicable.
- E. Storage of materials shall conform to the requirements of Section 205 of ACI 301.

2.02 CEMENT:

- A. Cement shall be standard Portland Cement Type II conforming to ASTM C150 and C1157. A minimum of 85% of cement by weight shall pass a 325 screen. Silica fume and flyash shall each be a minimum of 10% by mass of cement content.
- B. A single brand of cement shall be used throughout the WORK, and prior to its use, the brand shall be accepted by the CITY.
- C. Sacked cement shall be stored in such a manner so as to permit access for inspection and sampling. Certified mill test reports, including fineness, for each shipment of cement to be used shall be submitted to the CITY, if requested, regarding compliance with these Specifications.

2.03 AGGREGATES:

- A. Aggregates shall be obtained from pits acceptable to the CITY, shall be non-reactive, and shall conform to the requirements of ASTM C33.
- B. When tested in accordance with ASTM C33, the loss resulting after five (5) cycles of the soundness test, shall not exceed 10% for fine aggregate and 12% for coarse aggregate, when using sodium sulfate.
- C. When tested in accordance with ASTM C33, the ratio of silica released to reduction in alkalinity shall not exceed 1.0.
- D. Coarse Aggregates:
 - 1. Coarse aggregates shall be crushed stone, gravel or other approved inert material having clean, hard, durable, uncoated particles conforming to ASTM C33.
 - 2. The coarse aggregates shall be prepared and handled in two (2) or more size groups for combined aggregates with a maximum size greater than 3/4-inch. When the aggregates are proportioned for each batch of concrete, the two (2) size groups shall be combined.
 - 3. When tested in accordance with ASTM C33, the coarse aggregate shall show a loss not exceeding 42% after 500 revolutions, or 10.5% after 100 revolutions.
- E. Fine Aggregates:
 - 1. Fine aggregates shall be clean sand conforming to ASTM C33.
 - 2. When tested in accordance with ASTM D2419, the sand equivalency shall not be less than 75% for an average of three (3) samples, nor less than 70% for an individual test. Gradation of fine aggregate shall conform to ASTM C33 when tested in accordance with ASTM C136 for the fineness modulus of the sand used, including the optional grading in Section 6.2. The fineness modulus of sand used shall not be over 3.1.

3. When tested in accordance with ASTM C33, the fine aggregate shall produce a color in the supernatant liquid no darker than the reference standard color solution.

2.04 WATER:

- A. The water used in the concrete mix and for curing shall be clean, potable, and in accordance with ASTM C1602, ACI 301 and ACI 318. Water shall be free from objectionable quantities of silty organic matter, alkali, salts, and other impurities.
- B. The water shall be considered potable, for the purposes of this SECTION only, if it meets the requirements of the local governmental agencies. Agricultural water with high total dissolved solids (over 1000 mg/l TDS) shall not be used.

2.05 ADMIXTURES:

- A. General: All admixtures shall be compatible and be furnished by a single MANUFACTURER capable of providing qualified field service representation. Admixtures shall be used in accordance with MANUFACTURER's recommendations. If the use of an admixture is producing an inferior end result, the CONTRACTOR shall discontinue use of the admixture. Admixtures shall not contain thiocyanates or more than 0.05% chloride ion, and shall be non-toxic after 30 days.
- B. Air Entraining Admixtures:
 1. Air entraining admixture shall conform to ASTM C260. Air content shall be tested at the point of placement.
 2. The air-entraining agent shall be added to the batch in a portion of the mixing water. The solution shall be batched by means of a mechanical batcher capable of accurate measurement.
 3. Sufficient air-entraining agent shall be used to provide a total air content of 3%. SCC floors to receive a shake-on floor hardener shall have an air content not to exceed 3% or as recommended by the hardener MANUFACTURER.
- C. Set Controlling and Water Reducing Admixtures:
 1. Admixtures may be added at the CONTRACTOR's option, subject to the CITY's approval, to control the set, effect water reduction, and increase workability. The cost of adding an admixture shall be the CONTRACTOR's responsibility. SCC containing an admixture shall be first placed at a location determined by the CITY. Admixtures shall conform to the requirements of ASTM C494. The required quantity of cement shall be used in the mix regardless of whether or not an admixture is used.
 2. SCC shall not contain more than one (1) water-reducing admixture.
 3. Set retarding admixture may be either with or without water-reducing properties. Where the air temperature at the time of placement is expected to be consistently greater than 80 degrees F, a set retarding admixture shall be used. Set retarding admixture shall conform to ASTM C494 Type B or D.
 4. Set accelerating admixture may be either with or without water-reducing properties. Where the air temperature at the time of placement is expected to be consistently less than 40 degrees F, a non-corrosive set accelerating admixture shall be used. Set accelerating admixture shall conform to ASTM C494 Type C or E.
 5. Normal range water reducer shall conform to ASTM C494, Type A. The quantity of admixture used and the method of mixing shall be in accordance with the MANUFACTURER's instructions and recommendations.

6. High range water reducer shall conform to ASTM C494, Type F high range water reducer shall be added to the SCC after all other ingredients have been mixed and initial slump has been verified. No more than 14 ounces of water reducer per sack of cement shall be used. Water reducer shall be considered as part of the mixing water when calculating the water/cement ratio.
 - a. If the high range water reducer is added to the concrete at the Site, it may be used in conjunction with the same water reducer added at the batch plant. The high range water reducing admixture shall be accurately measured and pressure injected into the mixer as a single dose by an experienced technician. A standby system shall be provided and tested prior to each day's operation of the primary system.
 - b. SCC shall be mixed at mixing speed for a minimum of 70 mixer revolutions or five (5) minutes after the addition of the high range water reducer, unless recommended otherwise by the MANUFACTURER.
- D. Accelerating Admixture: Accelerating admixture shall conform to ASTM C494 Type C or E.
- E. Hydration Control Admixture: Hydration control admixture shall conform to ASTM C494 Type B or D.
- F. Workability-Retaining Admixture: Workability-retaining admixture shall retain concrete workability without affecting time of setting or early-age strength development and shall conform to ASTM C 494 Type S.
- G. Permeability-Reducing Admixture: Permeability-reducing admixture shall be an integral crystalline capillary waterproofing admixture for concrete as specified in SECTION 03050. It shall satisfy the following requirements, when used at the MANUFACTURER's recommended dosage:
 1. Reduction in capillary absorption: Not less than 40% relative to a companion untreated concrete mixture, when tested in accordance with ASTM C1585
 2. Reduction in water penetration: Not less than 40% relative to a companion untreated concrete mixture, when tested in accordance with DIN 1048.
 3. The admixture shall not affect the setting time, strength or durability properties of concrete.
- H. Viscosity-Modifying Admixture: Viscosity-modifying admixture shall conform to ASTM C494, Type S.
- I. Corrosion-Inhibiting Admixture: Corrosion-inhibiting shall be a nominal 30% solution of calcium nitrite or an amine/ester-based organic corrosion-inhibiting admixture and shall chemically inhibit corrosive action of chlorides on steel. Admixture shall not affect set times of SCC. Mixing water shall be adjusted for the admixture in accordance with the MANUFACTURER's recommendations.
- J. Shrinkage-Reducing Admixture: Shrinkage-reducing admixture shall conform to ASTM C494 C Type S.
- K. Alkali-Silica Reaction Inhibiting Admixture: Alkali-silica reaction inhibiting admixture shall contain a nominal lithium nitrate content of 30%, and shall conform to ASTM C494/C494M Type S.
- L. Anti-washout admixture may be used for SCC placed underwater. The admixture shall be added at the MANUFACTURER's recommended dosage rate. The admixture shall be an aqueous solution and the water in such solution shall be counted as mixing water for the

purpose of determining the water cement ratio of the concrete. Trial batches shall be made to verify compatibility of the materials and mix design performance

- M. Supplementary Cementitious Materials (SCM): The substitution of supplementary cementitious materials for cement shall be made on the basis of mass.
1. Fly Ash shall conform to ASTM C618.
 2. Slag Cement shall conform to ASTM C989.
 3. Silica Fume Admixture shall conform to ASTM C1240. Blended cements with interground silica fume will not be allowed. Silica fume admixture shall not affect the setting times of the SCC.
 - a. Water content of liquid slurry silica fume admixtures shall be considered as part of the mixing water when calculating the water/cement ratio.
 - b. Silica fume shall be added at the batch plant as recommended by the MANUFACTURER. For all types of mixing equipment, mix times shall be increased by 40% over the minimum mix time required to achieve mix uniformity as defined by ASTM C94. For truck-mixed and central mixed SCC, maximum allowable batch size shall be 80% of the maximum as called out by ASTM C94
- N. Microsynthetic fibers: Microsynthetic fibers shall conform to ASTM C1116, and shall provide a minimum crack reduction ratio (CRR) of 40% when tested in accordance with ASTM C1579.
- O. Type S admixture: Specific performance admixtures shall meet the requirements of ASTM C 494 Type S. The Type S admixtures, shall be compatible with other admixtures used in the self-consolidating concrete mixture proportions and shall not contain calcium chloride based ingredients.

2.06 CURING MATERIALS:

- A. Polyethylene sheet for use as SCC curing blanket shall be white and shall have a nominal thickness of six (6) mils. The loss of moisture when determined in accordance with the requirements of ASTM C156 shall not exceed 0.055 grams per square centimeter of surface.
- B. Polyethylene-coated waterproof paper sheeting for use as SCC curing blanket shall consist of white polyethylene sheeting free of visible defects, uniform in appearance, have a minimum thickness of two (2) mils, and be permanently bonded to waterproof paper conforming to the requirements of Federal Specification UU-B-790A. The loss of moisture, when determined in accordance with the requirements of ASTM C156, shall not exceed 0.055 gram per square centimeter of surface.
- C. Polyethylene-coated burlap for use as SCC curing blanket shall be minimum four (4) mils thick, white opaque polyethylene film impregnated or extruded into one side of the burlap. Burlap shall weigh not less than nine (9) ounces per square yard. The loss of moisture, when determined in accordance with the requirements of ASTM C156, shall not exceed 0.055 grams per square centimeter of surface.
- D. Curing mats for use in Curing Method 6 shall be heavy shag rugs or carpets or cotton mats quilted at four (4) inches on center. Curing mats shall weigh a minimum of 12 ounces per square yard when dry.

2.07 MISCELLANEOUS MATERIALS:

- A. Damp proofing agent shall be an asphalt emulsion conforming to ASTM D1227, Type III, Class 1.

- B. Evaporation retardant shall create a monomolecular film on the concrete. The retardant shall have no effect on cement hydration and shall meet local volatile organic compounds (VOC) requirements. Evaporation retardant shall not affect adhesion of curing compounds or other treatments and shall not affect the color of the concrete.
- C. Reinforcement shall be per SECTION 03200.
- D. Damp proofing agent shall be a waterborne emulsified-asphalt. Damp proofing shall be suitable for "green" or slightly damp surfaces and shall withstand normal expansion and contraction of the concrete. Damp proofing agent shall breath to allow vapors to escape. Damp proofing agent shall meet local VOC requirements.
- E. Vapor Barrier:
 - 1. Vapor Barrier shall consist of a composite of heavy kraft paper, asphalt, fiberglass reinforcement, and polyethylene film. The composite shall be laminated under heat and pressure.
 - 2. Vapor Barrier shall comply with federal specification UU-B-790A, Type I, Grade A, Style 4. Vapor Barrier shall have a water vapor permeance of less than 0.30 perms when tested per ASTM E96.
 - 3. Vapor Barrier shall be installed under SCC slabs of all habitable spaces. Barrier shall be installed per the MANUFACTURER recommendations and per ASTM E1643.
- F. Non-Waterstop Joint Material:
 - 1. Preformed Joint Material: Preformed asphalt-impregnated fiber conforming to ASTM D1751.
 - 2. Bond Breaker: All bond breakers shall be roofing felt or 15 mils minimum dry film thickness of bituminous paint as indicated.

2.08 SELF-CONSOLIDATING CONCRETE DESIGN REQUIREMENTS:

- A. General: The self-consolidating concrete shall be composed of cement, admixtures, aggregates, and water of the qualities indicated. The exact proportions in which these materials are to be used for different parts of the WORK will be determined during the trial batch process. In general, the mix shall be designed to produce a SCC capable of being deposited so as to obtain maximum density and minimum shrinkage, and, where deposited in forms, to have good consolidation properties and maximum smoothness of surface. The aggregate gradations shall be formulated to provide fresh SCC that will not promote rock pockets around reinforcing steel or embedded items. The proportions shall be changed whenever necessary or desirable to meet the required results. All changes shall be subject to review by the CITY.
- B. Supplementary Cementitious Materials (SCM): The weight of SCM shall not exceed the percentages listed in the following table.

Material	Maximum Percent of SCM by Mass of Total Cementitious Materials
Fly ash or other pozzolans	25
Slag cement	50
Silica Fume	10
Total of fly ash or other pozzolans, slag cement and silica fume	50*
Total of fly ash or other pozzolans and silica fume	35*

* Fly ash or other pozzolans and silica fume shall not constitute more than 25% and 10%, respectively, of the total mass of cementitious material.

C. Fine Aggregate Composition:

1. In mix designs for self-consolidating concrete, the aggregate-volume ratios of fine aggregate-to-total aggregates, by weight, shall be greater than or equal to 45% unless approved by the CITY. The volume ratios of fine-to-total aggregates in a mix design shall not exceed 50%.

D. Structural chloride resistant SCC shall contain four (4) gallons per cubic yard corrosion inhibiting admixture and a high range water reducer. Workability or strength demands shall be met by additional admixtures, if necessary.

E. Water/Cement Ratio and Compressive Strength:

1. Water/cement ratio is given for aggregates in saturated-surface dry condition, and total moisture of all aggregates, calculated by ASTM C566, less the absorption of the aggregate as calculated by ASTM C127 and C128, shall represent total free moisture in the aggregate to determine the water/cement ratio. Total free moisture of aggregates shall be added to batch water to estimate water content of SCC. The self-consolidating concrete shall have a water-to-cementitious materials ratio not exceeding 0.45 by mass.

Type of Work	Min 28-Day Compressive Strength (psi)	Maximum Size Aggregate (in)	* Minimum Cement Content per cubic yd (lbs)	* Maximum W/C Ratio (by weight)
Structural Concrete				
Roof, floor slabs, columns, walls, and all other concrete items not indicated elsewhere.	4,500	3/4	611	0.45
12-inch and thicker walls, slabs on grade, and footings (optional)	4,500	3/4	611	0.45
Structural silica fume concrete	6000	3/4	752	0.35
Structural chloride resistant concrete	5000	3/4	658	0.38

* The cement content and water cement ratio are based on total cementitious material including silica fume, slag or flyash.

NOTE: The CONTRACTOR is cautioned that the limiting parameters above are not a mix design. Admixtures may be required to achieve workability required by the CONTRACTOR's construction methods and aggregates. The CONTRACTOR is responsible for providing concrete with the required workability and strength.

F. Adjustments to Mix Design: The CONTRACTOR may elect to decrease the water/cement ratio to achieve the strength and shrinkage requirements and/or add water reducers, as required to achieve workability. The mixes shall be changed whenever such change is necessary or desirable to secure the required strength, density, workability, and surface finish, and the CONTRACTOR shall be entitled to no additional compensation because of

such changes. Any changes to the accepted SCC mix design shall be submitted to the CITY for review and shall be tested again in accordance with these Specifications.

2.09 CONSISTENCY:

- A. The quantity of water in a batch of self-consolidating concrete shall be just sufficient, with a normal mixing period. The quantity of water shall be changed as necessary, with variations in the nature or moisture content of the aggregates, to maintain uniform production of a desired consistency. The consistency of the SCC in successive batches shall be determined by slump flow tests in accordance with ASTM C1611. The slump flows, after the addition of all ingredients, shall be as follows:

Type of Construction	Target Slump Flow (in)
Slabs	25
Architectural members	27
Wall, lightly reinforced	25
Column or wall, densely reinforced	27
Drilled Shafts	22

- B. The allowable tolerance range of the slump flow for verification is plus or minus 2.5 inches.
- C. Visual Stability Index (VSI): The VSI Rating shall not exceed 1.0 in accordance with ASTM C1611. Perform a second test when the VSI of the first test exceeds 1.0. Reject the proposed mix if the second VSI test exceeds a value of 1.0. T₅₀ shall be recorded for information only and its recommended range is 2- 7 Seconds.
- D. J-Ring Flow: Difference between slump flow and J-Ring flow shall not be more than two (2) inches as measured by ASTM C1621.
- E. Stability: The stability of the SCC shall be determined in the laboratory prior to approval of the self-consolidating concrete mixture using test method ASTM C1610. Concrete mixtures shall have a maximum static segregation (segregation factor) of 15%.
- F. Air content shall be less than 3%.
- G. Maximum nominal size of coarse aggregate:
1. Not larger than 1/5 the narrowest dimension between sides of forms.
 2. Not larger than 1/3 the depth of slabs.
 3. Not larger than 3/4 of the minimum clear spacing between individual reinforcing bars or wires, bundles of bars, individual tendons, bundled tendons, or ducts.
 4. Maximum size of aggregate shall be 3/4-inch (19 mm).
1. The maximum allowable static segregation of the mix, determined in accordance with ASTM C1610, is 15%.

2.10 MEASUREMENT:

- A. The amount of cement and of each separate size of aggregate entering into each batch of SCC shall be determined by direct weighing equipment furnished by the CONTRACTOR and acceptable to the CITY.
- B. Weighing tolerances:

Material	Percent of Total Weight
----------	-------------------------

Cement	1
Aggregates	3
Admixtures	3

- C. The quantity of water entering the mixer shall be measured by a suitable water meter or other measuring device of a type acceptable to the CITY and capable of measuring the water in variable amounts within a tolerance of 1%. The water feed control mechanism shall be capable of being locked in position so as to deliver constantly any required amount of water to each batch of SCC. A positive quick-acting valve shall be used for a cut-off in the water line to the mixer. The operating mechanism shall prevent leakage when the valves are closed.
- D. Furnish to the CITY a mixture proportion for the self-consolidating concrete to be used.
 - 1. Proportion mixture according to Project specific criteria (Compressive Strength, Air Content, Slump Flow, T50, VSI, J-Ring Value and Segregation Factor).
 - 2. Use the same components in the trial batches as that to be used in the Project including coarse and fine aggregates, inert non-cementitious fillers, water, source and type of cement, supplementary cementitious materials and admixtures including any site-added admixtures intended to be used.

PART 3 - EXECUTION

3.01 FORMWORK: SCC formwork shall be in accordance with SECTION 03100. Additional measures shall be taken to seal the formwork to prevent leakage of cement paste or mortar.

3.02 PROPORTIONING AND MIXING:

- A. Proportioning of the mix shall conform to the requirements of Chapter 3 "Proportioning" of ACI 301.
- B. Materials shall be batched in accordance with ASTM C94.
- C. In addition to the use of a moisture probe, the moisture content of the aggregates shall be determined once a day prior to batching in accordance with ASTM C70 or ASTM C566. Aggregate samples shall be taken as close as possible to the area where moisture probe is located. Use of microwave oven or hot plate to dry the aggregates is permitted in addition to using an oven.
- D. Mixing shall conform to the requirements of Chapter 7 of ACI 301.
- E. Slump flow spreads shall be as indicated herein.
- F. Retempering of SCC that has partially hardened shall not be permitted.
- G. Volume of SCC batched shall be such that no spillage occurs during transport.

3.03 PREPARATION OF SURFACES FOR CONCRETING:

- A. General: Earth surfaces shall be thoroughly wetted by sprinkling prior to the placing of any SCC, and these surfaces shall be kept moist by frequent sprinkling up to the time of placing SCC thereon. The surface shall be free from standing water, mud, and debris at the time of placing SCC.
- B. Joints in SCC:

1. All joints shall be installed where indicated on the Drawings or where otherwise approved by the CITY. The surface of the construction joint shall be rough and prior to placement shall be cleaned and moistened with water.
 2. SCC surfaces upon or against which SCC is to be placed, where the placement of the SCC has been stopped or interrupted so that, as determined by the CITY, the new SCC cannot be incorporated integrally with that previously placed, are defined as construction joints. The surfaces of horizontal joints shall be given a compacted, roughened surface for good bonding. Except where the Drawings call for joint surfaces to be coated, the joint surfaces shall be cleaned of all laitance, loose or defective concrete, foreign material, and be roughened to a minimum 1/4-inch amplitude. Such cleaning and roughening shall be accomplished by hydroblasting or sandblasting (exposing aggregate) followed by thorough washing. Pools of water shall be removed from the surface of construction joints before the new SCC is placed.
 3. After the surfaces have been prepared, all approximately horizontal construction joints shall be covered with a 6-inch lift of a pea gravel mix. The mix shall be placed and spread uniformly. Wall SCC shall follow immediately and shall be placed upon the fresh pea gravel mix. If high range water reducer is used in the wall SCC, then the pea gravel joint topping does not need to be used.
- C. Placing Interruptions: When placing of SCC is to be interrupted long enough for the SCC to take a set, the working face shall be given a shape by the use of forms or other means that will secure proper union with subsequent WORK; provided that construction joints shall be made only where acceptable to the CITY.
- D. Embedded Items:
1. No SCC shall be placed until all formwork, installation of parts to be embedded, reinforcement steel, and preparation of surfaces involved in the placing have been completed and accepted by the CITY at least four (4) hours before placement of SCC. Surfaces of forms and embedded items that have become encrusted with dried grout from previous usage shall be cleaned before the surrounding or adjacent SCC is placed.
 2. Inserts or other embedded items shall conform to the requirements herein.
 3. Reinforcement, anchor bolts, sleeves, inserts, and similar items shall be set and secured in the forms at locations indicated on the Drawings or shown by Shop Drawings and shall be acceptable to the CITY before any SCC is placed. Accuracy of placement is the responsibility of the CONTRACTOR.
- E. Placing New Concrete Against Old:
1. Where concrete is to be placed against old concrete (any concrete which is greater than 60 days of age), the surface of the old concrete shall be thoroughly cleaned and roughened by hydroblasting, sandblasting or chipping to expose aggregate. The joint surface shall be coated with an epoxy bonding agent unless indicated otherwise by the CITY.
- F. No SCC shall be placed in any structure until all water entering the space to be filled with SCC has been properly cut off or has been diverted by pipes, or other means, and carried out of the forms, clear of the WORK. No SCC shall be deposited underwater nor shall the CONTRACTOR allow still water to rise on any SCC until the SCC has attained its initial set. Water shall not be permitted to flow over the surface of any SCC in such manner and at such velocity as will damage the surface finish of the concrete. Pumping or other necessary dewatering operations for removing ground water, if required, shall be the CONTRACTOR's responsibility and shall be subject to the review of the CITY.
- G. Corrosion Protection:

1. Pipe, conduit, dowels, and other ferrous items required to be embedded in SCC construction shall be so positioned and supported prior to placement of SCC that there will be a minimum of two (2) inches clearance between said items and any part of the SCC reinforcement. Securing such items in position by wiring or welding them to the reinforcement is not permitted.
- H. Openings for pipes, inserts for pipe hangers and brackets, and anchors shall, where practicable, be provided during the placing of SCC.
- I. Anchor bolts shall be accurately set and shall be maintained in position by templates while being embedded in SCC.
- J. Cleaning: The surfaces of metalwork to be in contact with SCC shall be thoroughly cleaned of all dirt, grease, loose scale and rust, grout, mortar, and other foreign substances immediately before the SCC is placed.

3.04 CONVEYING:

- A. SCC shall be conveyed from the mixer to the place of final deposit by methods that will prevent separation or loss of material.
- B. No aluminum materials shall be used in conveying any SCC.
- C. Ends of chutes, hopper gates, and all other points of concrete discharge throughout the CONTRACTOR's conveying, hoisting, and placing system shall be designed and arranged so that SCC passing from them will not fall separated into whatever receptacle immediately receives it. Conveyor belts, if used, shall be of a type acceptable to the CITY. Chutes longer than 50 feet will not be permitted. Minimum slopes of chutes shall be such that SCC of the indicated consistency will readily flow in them. If a conveyor belt is used, it shall be wiped clean by a device operated in such a manner that none of the mortar adhering to the belt will be wasted. All conveyor belts and chutes shall be covered.
- D. Pumping:
 1. If the pumped SCC does not produce satisfactory end results, the CONTRACTOR shall discontinue the pumping operation and proceed with the placing of SCC using conventional methods.
 2. The pumping equipment shall have two (2) cylinders and be designed to operate with one cylinder in case the other one is not functioning. In lieu of this requirement, the CONTRACTOR may have a standby pump on the Site during pumping.
 3. The minimum diameter of the hose conduits shall be in accordance with ACI 304.
 4. Pumping equipment and hose conduits that are not functioning properly shall be replaced.
 5. Aluminum conduits for conveying the concrete shall not be permitted.
 6. Concrete samples for slump, air content, and test cylinders will be taken at the placement end of the hose.

3.05 DELIVERY:

- A. Ready-mixed SCC shall be batched, mixed, transported and delivered in accordance with these Specifications and ASTM C94 including the following supplementary requirements:
 1. SCC shall be discharged within 1-1/2 hours from the time SCC was mixed, if centrally mixed, or from the time the original water was added, if transit-mixed, or before the drum has been revolved 300 revolutions, whichever is first. Ensure that the self-

consolidating concrete is delivered within the time limit that is allowed by the trial batch verification.

2. Truck mixers and their operation shall be such that the SCC throughout the mixed batch as discharged is within acceptable limits of uniformity with respect to consistency, mix, and grading. If slump flow tests taken at approximately the 1/4 and 3/4 points of the load during discharge give slump flows differing by more than 2.5 inches from the target or less, the mixer shall not be used on the WORK unless the causative condition is corrected and satisfactory performance is verified by additional slump tests. Mechanical details of the mixer, such as water measuring and discharge apparatus, condition of the blades, speed of rotation, general mechanical condition of the unit, and clearance of the drum, shall be checked before a further attempt to use the unit will be permitted.
3. The use of non-agitating equipment for transporting ready-mixed SCC will not be permitted. The quality and quantity of materials used in ready-mixed SCC and in batch aggregates shall be subject to continuous inspection at the batching plant by the CITY.
4. Each batch of SCC shall be mixed in a truck mixer for not less than 70 revolutions of the drum or blades at the rate of rotation designated by the MANUFACTURER of equipment. Additional mixing, if any, shall be at the speed designated by the MANUFACTURER of the equipment as agitating speed. All materials including mixing water shall be in the mixer drum before actuating the revolution counter for determining the number of revolution of mixing.

3.06 PLACING:

- A. Non-Conforming Work or Materials: Self-consolidating concrete which during or before placing is found not to conform to the requirements indicated herein shall be rejected and immediately removed from the WORK. SCC which is not placed in accordance with these Specifications, or which is of inferior quality, shall be removed and replaced.
- B. Unauthorized Placement: No self-consolidating concrete shall be placed except in the presence of a duly authorized representative of the CITY. The CONTRACTOR shall notify the CITY in writing at least 24 hours in advance of placement of any SCC.
- C. Placing of self-consolidating concrete shall conform to the applicable requirements of Chapter 8 of ACI 301 and the requirements of this SECTION.
- D. Placement in Slabs: SCC placed in sloping slabs shall proceed uniformly from the bottom of the slab to the top, for the full width of the placement. As the WORK progresses, the SCC shall be carefully worked around the slab reinforcement, and the surface of the slab shall be screeded in an up-slope direction.
- E. SCC shall not be dropped through reinforcement steel or into any deep form, nor shall SCC be placed in any form in such a manner as to leave accumulation of mortar on the form surfaces above the placed SCC. In such cases, means such as hoppers and, if necessary, vertical ducts of canvas, rubber, or metal shall be used for placing SCC in the forms in a manner that it may reach the place of final deposit without separation. SCC shall be uniformly distributed during the process of depositing and in no case after depositing shall any portion be displaced in the forms more than six (6) feet in horizontal direction. SCC in wall forms shall be deposited in uniform horizontal layers not deeper than two (2) feet and intervals not greater than six (6) feet; and care shall be taken to avoid inclined layers or inclined construction joints except where such are required for sloping members. Each layer shall be placed while the previous layer is still soft. Sufficient illumination shall be provided in the interior of all forms so that the concrete at the places of deposit is visible from the deck or runway.

- F. SCC with hardener shall be placed per the hardener MANUFACTURERs written recommendations.
- G. Placing New Concrete Against Old: Epoxy adhesive bonding agent shall not be applied to the old surfaces. The old concrete surface shall be saturated at least overnight and shall be saturated surface dry immediately before placing self-consolidating concrete.
- H. Temperature of Self-Consolidating Concrete: The temperature of SCC when it is being placed shall be not more than 90 degrees F or less than 55 degrees F for sections less than 12-inches thick, nor less than 50 degrees for all other sections. The CONTRACTOR shall be entitled to no additional compensation on account of the temperature requirements.
- I. Hot Weather Placement:
 - 1. Placement of SCC in hot weather shall conform to ACI 305 and the following:
 - 2. When the temperature of the SCC is 85 degrees F or above, the time between the introduction of the cement to the aggregates and discharge shall not exceed 60 minutes.
 - 3. If concrete is placed when the weather is such that the temperature of the SCC would exceed 90 degrees F, the CONTRACTOR shall employ effective means, such as pre-cooling of aggregates and mixing water using ice or placing at night, as necessary to maintain the temperature of the concrete below 90 degrees F as it is placed.
- J. Cold Weather Placement
 - 1. Placement of SCC in cold weather shall conform to ACI 306.1, and the following:
 - 2. SCC ingredients shall not be heated to a temperature higher than that necessary to keep the temperature of the mixed SCC, as placed, from falling below the minimum temperature.
 - 3. Maintain the SCC temperature above 50 degrees F for at least 72 hours after placement.
- K. Order of Placing Concrete:
 - 1. The order of placing SCC in all parts of the WORK shall be acceptable to the CITY. In order to minimize the effects of shrinkage, the SCC shall be placed in units as bounded by construction joints at the indicated locations. The placing of units shall be done by placing alternate units in a manner such that each unit placed shall have cured at least five (5) days for hydraulic structures and two (2) days for all other structures before the contiguous unit or units are placed, except that the corner sections of vertical walls shall not be placed until the two (2) adjacent wall panels have cured at least ten (10) days for hydraulic structures and four (4) days for all other structures.
 - 2. The surface of the SCC shall be level whenever a run of SCC is stopped. To insure a level, straight joint on the exposed surface of walls, a wood strip at least 3/4-inch thick shall be tacked to the forms on these surfaces. The SCC shall be carried about 1/2-inch above the underside of the strip. About one hour after the SCC is placed, the strip shall be removed and any irregularities in the edge formed by the strip shall be leveled with a trowel and laitance shall be removed.

3.07 TAMPING AND VIBRATING:

- A. Consolidation is typically not necessary for self-consolidating concrete. However, the CONTRACTOR shall have internal vibrators as recommended in ACI 301 (ACI 301 M) on-site in case internal vibration is needed due to delays in placement or the SCC has a lower than expected slump flow and has to be placed to prevent the formation of a cold joint. Place the

self-consolidating concrete without any vibration, unless unexpected delays occur or it is determined that minimal vibration efforts result in better consolidation.

- B. If internal vibration is needed, it shall be done at the same time rammed, stirred, or worked with suitable appliances, tamping bars, shovels, or forked tools until it completely fills the forms or excavations and closes snugly against all surfaces. Subsequent layers of SCC shall not be placed until the layers previously placed have been worked thoroughly. Vibrators shall be provided in sufficient numbers, with standby units as required, to accomplish the required results within fifteen (15) minutes after SCC of the prescribed consistency is placed in the forms. The vibrating head shall not contact the surfaces of the forms. Care shall be taken not to vibrate concrete excessively or to work it in any manner that causes segregation of its constituents.
- C. Prior approval by the CITY shall be obtained if minimal vibration (external or internal) is required for proper consolidation due to congested reinforcement or space restrictions.

3.08 FIELD QUALITY CONTROL:

- A. General:
 - 1. Provide adequate facilities for safe storage and proper curing of SCC test cylinders on-site for the first 24 hours or for additional time as may be required before transporting samples to the test lab.
 - 2. Provide SCC for testing of slump flow, air content, density (unit weight) and temperature and, for making cylinders.
 - 3. Water shall not be added to the SCC at the job Site.
 - 4. Field addition of admixtures, if needed for logistics reasons, shall be approved by the CITY.
- B. Consult with the admixture MANUFACTURER in developing quality control operations appropriate to the Project.
- C. Field testing and inspection shall be performed in accordance with ACI 301.
- D. SCC tests shall be conducted by an ACI Concrete Field Testing Technician Grade I, or equivalent, knowledgeable in testing self-consolidating concrete.
- E. Tests shall be conducted on the first batch of the day and for each 150 yd³ (110m³) or fraction thereof, for each SCC mixture placed in anyone day.
- F. The testing agency shall provide the following services:
 - 1. Inspect SCC placement.
 - 2. Sample the SCC in accordance with ASTM C172.
 - 3. Test SCC slump flow in accordance with ASTM C1611. Cone can either be used upright or inverted. Same procedure shall be followed throughout the Project.
 - 4. Record the Visual Stability Index (VSI).
 - 5. Test passing ability in accordance with ASTM C1621. Cone shall be used in the same way as in slump flow test.
 - 6. Determine the air content of SCC sample for each strength test in accordance with ASTM C231 or ASTM C173, except that the SCC shall be filled in one lift and not consolidated. Light tamping of the sides of the air-meter is permitted.

7. Determine the density (unit weight) of SCC sample for each strength test in accordance with ASTM C138, except that the SCC shall be filled in one lift and not consolidated.
8. Record the temperature of SCC for each strength test in accordance with ASTM C 1064.
9. Cast SCC specimens for compressive strength test as follows:
Cast and cure at five (5) 6-inch by 12-inch (150 mm by 300 mm) cylinders in accordance with ASTM C31, except that the SCC shall be placed in one lift and not consolidated. However, light tapping of the sides of the cylinders with an open hand is permitted
10. Record the fresh SCC data for each set. The datasheet shall include the following:
 - a. Mixture number
 - b. Specified 28 day strength
 - c. Date and time of batching
 - d. Time of testing
 - e. Location of placement
 - f. Truck number
 - g. Ticket number
 - h. Slump flow, VSI, passing ability, air content, density (unit weight) and temperature of concrete
 - i. Ambient temperature
 - j. Names and quantities of admixtures added on site, and, name and title of the person who authorized the addition
 - k. Set number, if more than one set of cylinders are cast on a single day
 - l. Name of the testing agency
 - m. Name and signature of the inspector who conducted the test, and
 - n. Any additional observations or comments.
11. Mark the cylinders and write the date of casting on each cylinder.
12. Store and protect the cylinders at the job Site immediately after casting in accordance with ASTM C31.
13. Transport the cylinders from job Site to the laboratory in accordance with ASTM C31 after the cylinders have attained acceptable strength.
14. Cure the cylinders in the laboratory in accordance with ASTM C31.
15. Test cylinders for compressive strength in accordance with ASTM C39.
16. Test two (2) cylinders at seven (7) days for information and at least two (2) cylinders at 28 days for acceptance unless otherwise specified.
17. Base strength value on the average of at least two (2) cylinders tested at 28 days.
18. Test report shall include all the information in Item 10 above and compressive strength data, and shall be signed by the laboratory manager.
19. Strength of SCC shall be deemed satisfactory if both of the following requirements are met (ACI 318).

- a. The arithmetic average of the strength of the two (2) specimens tested at 28 days tests equals or exceeds the specified compressive strength.
 - b. No compressive strength test falls below the specified compressive strength by more than 500 psi when the specified strength is 5000 psi or less; or by more than 10% of specified strength, when the specified strength is above 5000 psi.
20. If any strength test of laboratory-cured cylinders falls below the specified compressive strength by more than the values specified above, remedial measures shall be taken as recommended by the CITY.

3.09 **CURING AND DAMPPROOFING:** SCC shall be cured in accordance with ACI 308 for a minimum of seven (7) days after placement in accordance with the methods indicated below for the different parts of the WORK. The appropriate curing method should be applied as soon as practically possible.

Surface to be Cured or Dampproofed	Method
Unstripped forms	1
Wall sections with forms removed	6
Construction joints between footings and walls, and between floor slab and columns	2
Encasement and ductbank concrete and thrust blocks	3
All concrete surfaces not specifically indicated in this Paragraph	4
Floor slabs on grade in hydraulic structures	5
Slabs on grade to receive an adhered floor finish	6 (Omit curing compound)
Slabs not on grade	6
Silica Fume Concrete	7
Concrete with hardener	Per manufacture's written recommendations

- A. Method 1: Wooden forms shall be wetted immediately after SCC has been placed and shall be kept wet with water until removal. If steel forms are used the exposed SCC surfaces shall be kept continuously wet until the forms are removed. If forms are removed within seven (7) days of placing the SCC, curing shall be continued in accordance with Method 6 below.
- B. Method 2: The surface shall be covered with burlap mats which shall be kept wet with water for the duration of the curing period, until the SCC in the walls has been placed. No curing compound shall be applied to surfaces cured under Method 2.
- C. Method 3: The surface shall be covered with moist earth not less than four (4) hours or more than 24 hours after the SCC is placed. Earthwork operations that may damage the SCC shall not begin until at least seven (7) days after placement of SCC.
- D. Method 4: The surface shall be sprayed with a liquid curing compound.
 - 1. It shall be applied in accordance with the MANUFACTURER's printed instructions at a maximum coverage rate of 200 square feet per gallon and in such a manner as to cover the surface with a uniform film that will seal thoroughly.
 - 2. Where the curing compound method is used, care shall be exercised to avoid damage to the seal during the seven (7) day curing period. If the seal is damaged or broken before the expiration of the curing period, the break shall be repaired immediately by the application of additional curing compound over the damaged portion.

3. Wherever curing compound has been applied by mistake to surfaces against which SCC subsequently is to be placed and to which it is to adhere, compound shall be entirely removed by wet sandblasting just prior to the placing of new SCC.
4. Curing compound shall be applied as soon as the SCC has hardened enough to prevent marring on unformed surfaces and within two (2) hours after removal of forms. Repairs to formed surfaces shall be made within the two (2) hour period; provided, however, that any such repairs which cannot be made within the said two (2) hour period shall be delayed until after the curing compound has been applied. When repairs are to be made to an area on which curing compound has been applied, the area involved shall first be wet-sandblasted to remove the curing compound.
5. At locations where SCC is placed adjacent to a panel which has been coated with curing compound, the panel shall have curing compound reapplied to an area within six (6) feet of the joint and to any other location where the curing membrane has been disturbed.
6. Prior to final acceptance of the WORK, all visible traces of curing compound shall be removed from all surfaces in such a manner that does not damage the surface finish.

E. Method 5:

1. Until the SCC surface is covered with curing compound, the entire surface shall be kept damp by applying water using nozzles that atomize the flow so that the surface is not marred or washed. The SCC shall be given a coat of curing compound in accordance with Method 4 above. Not less than one (1) hour or more than four (4) hours after the curing compound has been applied, the surface shall be wetted with water delivered through a fog nozzle, and concrete-curing blankets shall be placed on the slabs. The curing blankets shall be polyethylene sheet, polyethylene-coated waterproof paper sheeting, or polyethylene-coated burlap. The blankets shall be laid with the edges butted together and with the joints between strips sealed with two (2) inches wide strips of sealing tape or with edges lapped not less than three (3) inches and fastened together with a waterproof cement to form a continuous watertight joint.
2. The curing blankets shall be left in place during the seven (7) day curing period and shall not be removed until after SCC for adjacent work has been placed. If the curing blankets become torn or otherwise ineffective, the CONTRACTOR shall replace damaged sections. During the first three (3) days of the curing period, no traffic of any nature and no depositing, temporary or otherwise, of any materials shall be permitted on the curing blankets. During the remainder of the curing period, foot traffic and temporary depositing of materials that impose light pressure will be permitted only on top of plywood sheets 5/8-inch minimum thickness, laid over the curing blanket. The CONTRACTOR shall add water under the curing blanket as often as necessary to maintain damp SCC surfaces at all times.

F. Method 6: This method applies to both walls and slabs.

1. The SCC shall be kept continuously wet by the application of water for a minimum period of at least seven (7) consecutive days beginning immediately after the SCC has reached final set or forms have been removed.
2. Until the SCC surface is covered with the curing medium, the entire surface shall be kept damp by applying water using nozzles that atomize the flow so that the surface is not marred or washed.
3. Heavy curing mats shall be used as a curing medium to retain the moisture during the curing period. The curing medium shall be weighted or otherwise held substantially in contact with the SCC surface to prevent being dislodged by wind or any other causes. Edges shall be continuously held in place.

4. The curing blankets and SCC shall be kept continuously wet by the use of sprinklers or other means both during and after normal working hours.
 5. Immediately after the application of water has terminated at the end of the curing period, the curing medium shall be removed, the entire SCC surface shall be wetted, and curing compound shall be immediately applied to the entire surface in accordance with Method 4 above.
 6. The CONTRACTOR shall dispose of excess water from the curing operation to avoid damage to the WORK.
- G. Method 7: This method applies to SCC containing silica fume for walls and slabs and shall be used in addition to the curing methods 1 through 6, and shall be concluded within one (1) hour of SCC placing.
1. In addition to the requirements of Method 1 for unstripped forms, and Method 6 for walls after the forms are removed, and Method 4 for slabs, wall surfaces after the forms are removed and slab surfaces shall be coated with two coats of a white pigmented curing compound as indicated in Method 4 above. A second coat of white pigmented curing compound shall be applied to the SCC surface at seven (7) days after the application of the initial coats. In addition, prewetted burlap shall be placed over the flatwork surface and kept continuously wet for a minimum of seven (7) days or until the time necessary to attain 70% of the required compressive strength in accordance with ACI 308 Section 3.1.3.
- H. Damp proofing: The exterior surfaces of backfilled dry well walls and buried roof slabs shall be damp proofed as follows.
1. Immediately after completion of curing the surface shall be sprayed with a damp proofing agent consisting of an asphalt emulsion. Application shall be in two (2) coats. The first coat shall be diluted to one-half strength by the addition of water and shall be sprayed on so as to provide a maximum coverage rate of 100 square feet per gallon of dilute solution. The second coat shall consist of an application of the undiluted material, and shall be sprayed on so as to provide a maximum coverage rate of 100 square feet per gallon. Damp proofing material shall be as indicated above.
 2. As soon as the material has taken an initial set, the entire area thus coated shall be coated with whitewash. Any formula for mixing the whitewash may be used if it produces a uniformly coated white surface and remains until placing of the backfill. If the whitewash fails to remain on the surface until the backfill is placed, the CONTRACTOR shall apply additional whitewash.

3.10 FINISHES:

A. General:

1. SCC surfaces shall be free from fins, bulges, ridges, offsets, honeycombing, or roughness of any kind, and shall present a finished, smooth, continuous hard surface.
2. Allowable deviations from plumb or level and from the alignment, profiles, and dimensions indicated are defined as tolerances and are indicated herein. These tolerances are to be distinguished from irregularities in finish as described herein.
3. Aluminum finishing tools shall not be used.

B. Formed Surfaces:

1. No treatment is required after form removal except for curing, repair of defective concrete, and treatment of surface defects. Where architectural finish is required, it shall be as indicated.

3.11 PROTECTION:

- A. The CONTRACTOR shall protect SCC against injury until final acceptance.
- B. Fresh SCC shall be protected from damage due to rain, hail, sleet, or snow. The CONTRACTOR shall provide such protection while the SCC is still plastic and whenever precipitation is imminent or occurring.

3.12 DEFECTIVE SURFACE TREATMENTS:

A. Patching SCC:

- 1. Patch all tie holes, honeycombs or other defects with a Portland Cement and sand grout.
- 2. Defective surfaces to be repaired shall be cut back from trueline a minimum depth of 1/2-inch over the entire area. Feathered edges will not be permitted. Where chipping or cutting tools are not required in order to deepen the area properly, the surface shall be prepared for bonding by the removal of all laitance or soft material, plus not less than 1/32-inch depth of the surface film from all hard portions by means of an efficient sandblast.
- 3. After cutting and sandblasting, the surface shall be wetted sufficiently in advance of shooting with shotcrete or with cement mortar so that while the repair material is being applied, the surfaces underneath will remain moist but not so wet as to overcome the suction upon which a good bond depends.
- 4. Holes left by tie-rod cones shall be reamed with suitable toothed reamers so as to leave the surfaces of the holes clean and rough. Holes then shall be repaired in an approved manner with dry-packed cement grout. Holes left by form-tying devices having a rectangular cross-section and other imperfections having a depth greater than their least surface dimension shall not be reamed but shall be repaired in an approved manner with dry-packed cement grout.
- 5. The grout shall not be richer than one (1) part cement and three (3) parts sand with the amount of mixing water enough to produce a workable mix. For exposed walls, the cement shall contain such a proportion of white Portland cement as is required to make the color of the patch match the color of the surrounding concrete. The patch shall be finished in such a manner as to match the adjoining surfaces.
- 6. Surfaces of repairs shall receive the same kind and amount of curing treatment as required for the concrete in the repaired section.

B. Defective SCC:

- 1. Any SCC which is not formed as shown on the Drawings or does not conform to the Contract tolerances or shows defects which reduce its structural adequacy, shall be removed from the job by the CONTRACTOR at his expense unless the CITY grants permission to patch the defective area.

C. Exposed SCC Surfaces:

- 1. As soon as forms are removed, exposed surfaces shall be carefully examined and all ridges, ribs and other imperfections shall be rubbed with an abrasive stone or ground in a satisfactory manner in order to secure a smooth, uniform and continuous surface. Plastering or coating of surfaces to be smoothed will not be permitted.
- 2. No repairs shall be made until after inspection by the CITY.
- 3. In no case will extensive patching of honeycombed SCC be permitted.

- a. SCC containing voids, holes, honeycombing, or similar depression defects shall be completely removed and replaced. Repairs and replacements shall be performed promptly.

3.13 **REINFORCEMENT:** Reinforcement shall be in accordance with SECTION 03200. Concrete protection for the reinforcement shall conform to the requirements ACI 318, paragraph 7.7.1.

3.14 **CONSTRUCTION TOLERANCES:**

- A. The CONTRACTOR shall set and maintain SCC forms and perform finishing operations to ensure that the completed WORK is within tolerances. Surface defects and irregularities are defined as finishes and are to be distinguished from tolerances. Tolerance is the permissible variation from lines, grades, or dimensions indicated on the Drawings. Where tolerances are not stated in the specifications, permissible deviations will be in accordance with ACI 117.
- B. The following non-cumulative construction tolerances apply to finished walls and slab unless otherwise indicated:

Item	Tolerance
Variation of the constructed linear outline from the established position in plan	In 10-feet: 1/4-inch; In 20-feet or more: 1/2-inch
Variation from the level or from the grades indicated.	In 10-feet: 1/4-inch; In 20-feet or more: 1/2-inch
Variation from plum	In 10-feet: 1/4-inch; In 20-feet or more: 1/2-inch
Variation in the thickness of slabs and walls.	Minus 1/4-inch; Plus 1/2-inch
Variation in the locations and sizes of slabs and wall openings	Plus or minus 1/4-inch

3.15 **CARE AND REPAIR OF CONCRETE:** The CONTRACTOR shall protect SCC against injury or damage from excessive heat, lack of moisture, overstress, or any other cause until final acceptance. Particular care shall be taken to prevent the drying of SCC and to avoid roughening or otherwise damaging the surface. Any SCC found to be damaged, or which may have been originally defective, or which becomes defective at any time prior to the final acceptance of the completed WORK, or which departs from the established line or grade, or which, for any other reason, does not conform to the requirements of the Contract Documents, shall be satisfactorily repaired or removed and replaced with acceptable SCC.

END OF SECTION

SECTION 03350 – CONCRETE FINISHES

PART 1 - GENERAL

1.01 SUMMARY:

- A. Furnish all materials, labor, and equipment required to provide finishes of all concrete surfaces specified herein and shown on the Drawings.

1.02 REFERENCE SPECIFICATIONS, CODES AND STANDARDS:

- A. Without limiting the generality of the other requirements of the specifications, all work herein shall conform to the applicable requirements of the following documents. All referenced specifications, codes, and standards refer to the most current issue available at the time of Bid.
 - 1. ACI 301 -Specifications for Structural Concrete for Buildings
 - 2. ACI 318 - Building Code Requirements for Reinforced Concrete

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.01 FINISHES ON FORMED CONCRETE SURFACES:

- A. Unless the details specify otherwise, all surfaces shall receive at least a Type I finish. The City shall be the sole judge of acceptability of all concrete finish work.
 - 1. Type I - Rough: All fins, burrs and other projections left by the forms shall be removed. All holes left by removal of ends of ties, and all other holes, depressions, or voids shall be filled solid with cement grout after first being thoroughly wetted. Honeycombs shall be chipped back to solid concrete as directed, prior to patching with cement grout. Holes shall be filled with a small tool that will permit packing the hole solidly with cement grout. Cement grout shall consist of one part cement to three parts sand, and the amount of mixing water shall be as little as consistent with the requirements of handling and placing. Color of cement grout shall match the adjacent wall surface.
 - 2. Type II - Grout Cleaned: Where this finish is required, it shall be applied after completion of Type I finish. After the concrete has been predampened, a slurry consisting of one part cement (including an appropriate quantity of white cement in order to produce a color matching the surrounding concrete) and 1-1/2 parts sand passing the No. 16 sieve, by damp loose volume, shall be spread over the surface. Any surplus shall be removed. The finish shall be kept damp for at least 36 hours after application.
 - 3. Type III - Smooth Rubbed: Where this finish is required, it shall be applied after the completion of the Type I finish. No rubbing shall be done before the concrete is thoroughly hardened and the mortar used for patching is firmly set. A smooth, uniform surface shall be obtained. Unless the nature of the irregularities require it, the general surface of the concrete shall not be cut into. Corners and edges shall be slightly rounded. Brush finishing or painting with grout or neat cement will not be permitted.
 - 4. All work performed on flumes or similar areas that transports or processes water utilized in the potable water process must have a smooth finish to minimize the accumulation of debris or bio-growth.

3.02 SLAB AND FLOOR FINISHES:

- A. Slabs and floors shall be Broom finished to match existing surfaces.

3.03 SEALING OF CONCRETE FLOOR:

- A. After installation of all equipment and piping, and after completion of other related construction activities, all floor slabs which are to remain unpainted and not intended to be immersed shall be sealed with a floor sealer unless stated otherwise. Painting and sealing shall not be performed in areas where the surface touches finished water or raw water. Remove all dirt, droppage, oil, grease, asphalt or other foreign matter with caustics and detergents as required prior to application. Sealer shall be applied in accordance with the manufacturer's recommendations.

3.04 FINISHES ON EQUIPMENT PADS:

- A. Formed surfaces of equipment pads shall receive a Type I finish.
- B. Top surfaces of equipment pads, except those surfaces subsequently required to receive non-shrink grout and support equipment bases shall be steel troweled. Surfaces which will later receive non-shrink grout shall, before the concrete takes its final set, be made rough by removing the sand and cement that accumulates on the top to the extent that the aggregate will be exposed with irregular indentations in the surface up to 1/2 inch deep.

END OF SECTION

SECTION 03600 GROUT

PART 1 - GENERAL

1.01 SCOPE:

- A. Summary of Work: The CONTRACTOR shall furnish all equipment, labor and material for the proper placement and curing of grout as indicated on the Drawings and as specified herein.
- B. Related Work Specified Elsewhere:
 - 1. SECTION 01300 – Submittals
 - 2. SECTION 03100 - Concrete Formwork and Accessories
 - 3. SECTION 03300 - Cast-in-Place Concrete

1.02 APPLICABLE STANDARDS AND PUBLICATIONS: The following standard specifications shall apply to the WORK of this SECTION:

- A. American Society of Testing and Materials (ASTM)
 - 1. C109 – Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2-in or [50-mm] Cube Specimens)
 - 2. C307 - Standard Test Method for Tensile Strength of Chemical-Resistant Mortar, Grouts, and Monolithic Surfacing
 - 3. C496 - Standard Test Method for Splitting Tensile Strength of Cylindrical Concrete Specimens
 - 4. C531 – Standard Test Method for Linear Shrinkage and Coefficient of Thermal Expansion of Chemical-Resistant Mortars, Grouts, Monolithic Surfacing, and Polymer Concretes
 - 5. C579 – Standard Test Methods for Compressive Strength of Chemical-Resistant Mortars, Grouts, Monolithic Surfacing, and Polymer Concretes
 - 6. C580 - Standard Test Method for Flexural Strength and Modulus of Elasticity of Chemical-Resistant Mortars, Grouts, Monolithic Surfacing, and Polymer Concretes
 - 7. C827 – Standard Test Method for Change in Height at Early Ages of Cylindrical Specimens of Cementitious Mixtures
 - 8. C881 – Standard Specification for Epoxy-Resin-Base Bonding Systems for Concrete
 - 9. C882 - Standard Test Method for Bond Strength of Epoxy-Resin Systems Used with Concrete by Slant Shear
 - 10. C939 - Standard Test Method for Flow of Grout for Preplaced-Aggregate Concrete (Flow Cone Method)
 - 11. C1090 – Standard Test Method for Measuring Changes in Height of Cylindrical Specimens from Hydraulic-Cement Grout
 - 12. C1107 - Standard Specification for Packaged Dry, Hydraulic-Cement Grout (Non-Shrink)
 - 13. C1339 - Standard Test Method for Flowability and Bearing Area of Chemical-Resistant Polymer Machinery Grouts
 - 14. D648 – Standard Test Method for Deflection Temperature of Plastics Under Flexural Load in the Edgewise Position
 - 15. D695 – Standard Test Method for Compressive Properties of Rigid Plastics
- B. International Concrete Repair Institute (ICRI)
 - 1. Technical Guide for Selecting and Specifying Concrete Surface preparation for Sealers, Coatings, and Polymer Overlays
- C. American Institute of Steel Construction (AISC)

1. Manual of Steel Construction
- D. American Concrete Institute (ACI)
 1. Building Code Requirements for Structural Concrete (ACI 318, latest edition)
- E. International Code Council (ICC), formerly the International Conference of Building Officials (ICBO)

1.03 DEFINITIONS: (Not Applicable)

1.04 SUBMITTALS: The CONTRACTOR shall submit the following:

- A. Submittals shall be in accordance with SECTION 01300.
- B. MANUFACTURER's literature containing instructions and recommendations on the mixing, handling, placement, curing, and appropriate uses for each type of grout used in the WORK, and location of use.
- C. Name and telephone number of grout MANUFACTURER's representative, who will give on-site job service. The representative shall have at least one (1) year of experience with the chosen grouts.

1.05 QUALIFICATIONS:

- A. Pre-installation Demonstration and Training:
 1. The grout MANUFACTURER shall give a demonstration and training session for all the cement based non-shrink and epoxy grouts to be used on the Project, before any installation of grout is allowed.
 2. Training session shall use a minimum of five (5) bags of Cement Based Non-Shrink Class I Grout mixed to fluid consistency. Tests shall be conducted for flow cone and bleed tests. Six (6) cubes for testing at 1, 3, and 28 days shall be made. The remaining grout shall be placed, and curing initiated on actual project placements such as baseplates and tie holes to provide on-the-job training for the CONTRACTOR and CITY. The CONTRACTOR shall have the employees who will be doing the actual WORK participate in this training and demonstration session. The training session shall include methods for curing the grout.
 3. The MANUFACTURER shall mix enough Cement Based Non-Shrink Class II Grout for a minimum of 15 tie holes and shall train the CONTRACTOR's employees in how to perform the WORK and cure the grout. The CONTRACTOR shall have the employees assisting in the mixing and sealing of the tie holes.
 4. If the Project includes patching, throughbolt holes, epoxy anchors, and/or blockouts, the MANUFACTURER shall also train the CONTRACTOR's employees in the mixing and curing of the epoxy grouts for each of these applications.
 5. The CONTRACTOR shall transport the test cubes to an independent test laboratory, obtain the test reports, and report these demonstration and training test cube strengths to the CITY.
- B. Adhesive anchor installers shall be trained and qualified at the Site by MANUFACTURER's representative before installing any adhesive anchors. Training and qualification for each installer shall include, but not be limited to:
 1. Anchors installed in both the vertical and horizontal positions in a mock-up concrete panel of adequate size and thickness. Anchors shall be tested in tension and shear loading. A minimum of three anchors shall be tested for each installation position.
 2. Anchors shall be tested at two times the published allowable load in tension and in shear as indicated by the AISC Manual of Steel Construction.
 3. If any of the three test bolts in any installation position fail to reach the test loads, the installer shall be re-tested with the same procedure. Re-testing is required only for the failed installation position.

4. An installer who has three consecutive successful bolt tests in the first or second trial is considered qualified for adhesive anchor installation for this Project. The MANUFACTURER's representative shall issue a certificate to the qualified installer, and a copy of the certificate shall be filed with the CONTRACTOR and be submitted to the CITY.
5. The test anchor size shall be the maximum size adhesive anchor used on the Project. The embedment length shall be long enough to develop the allowable steel strength per AISC Manual of Steel Construction and ACI 318, Appendix D.
6. Each installer shall be re-qualified every six (6) months for the duration of the Project, by the same qualifying procedure.
7. The certification of each qualified installer shall be available for verification at the Special Inspector's request.
8. All defective anchors noted by the Special Inspector shall be replaced and re-installed by the CONTRACTOR without any additional compensation.

1.06 RESPONSIBILITIES:

- A. The CONTRACTOR shall assist the CITY in obtaining specimens for testing and shall furnish all materials necessary for fabricating the test specimens.
- B. The cost of laboratory tests on grout will be paid by the CITY except where test results show the grout to be defective. In such case, the CONTRACTOR shall pay for the tests, removal and replacement of defective WORK, and re-testing all at no increased cost to the CITY.
- C. The MANUFACTURER of prepackaged grouts shall provide on-site technical assistance within 72 hours of request at no cost to the CITY.

1.07 CERTIFICATIONS AND TESTING: The CONTRACTOR shall provide to the CITY three (3) copies of certified test results for all tests required herein.

- A. Test results and service report from the field tests and the demonstration and training session verifying the requirements indicated herein.
- B. Certification that all grout used on the Project contains no chlorides or other chemicals that cause corrosion.
- C. MANUFACTURER's certification that their non-shrink grout does not contain aluminum, zinc, or magnesium powders, used as a method of expansion.
- D. ICC certifications for all adhesive anchors.

1.08 INSPECTION COORDINATION: All adhesive anchor installations shall have special inspections as recommended by the ICC report on the adhesive anchors and local codes.

1.09 WARRANTY: The CONTRACTOR shall warrant the WORK against defects for one (1) year from the date of Substantial Completion and as described in Article 13 of Section 00700 - General Terms and Conditions.

PART 2 - PRODUCTS

2.01 APPLICATION:

- A. Unless indicated otherwise, grouts shall be provided as listed below whether indicated on the Drawings or not:

TYPE OF GROUT	APPLICATION
Cement Grout	Surface repairs

TYPE OF GROUT	APPLICATION
Non-Shrink - Class I	All anchor bolts and reinforcing steel required to be set in grout in which the average working or operating temperature will be over 100 degrees F, or in high fire risk areas.
	Beam and column (1 or 2 story) base plates less than 16 inches in the least dimension.
	Storage tanks and other non-motorized equipment and machinery under 30 horsepower
	Filling blockout spaces for embedded items such as railing posts, gate guide frames, etc. (Where placement time is less than 20 min.)
	Repair of holes and defects in concrete members which are not water bearing and not in contact with soil or other fill material
	Any application not listed, where grout is called for on the Drawings
Non-Shrink - Class II	Column base plates (greater than 2 story or larger than sixteen (16) inches in the least dimension)
	Filling blockout spaces for embedded items such as railing posts, gate guide frames, etc. (where placement time exceeds 20min.)
	Under precast concrete elements
	Repair of holes and defects in concrete members which are water bearing or in contact with soil or other fill materials
Non-Shrink Epoxy	Machinery over 30 horsepower and equipment under 30 horsepower but subject to severe shock loads and high vibration
Epoxy Anchor Grout	All anchor bolts and reinforcing steel required to be set in grout that are not in high temperature or high fire risk areas.
Topping Grout	Toppings and concrete/grout fill less than three (3) inches thick
Structural Concrete per 03300	Toppings and concrete/grout fill greater than three (3) inches thick

2.02 MATERIALS:

A. Cement Grout:

1. Cement grout shall be composed of one (1) part cement, three (3) parts sand, and the minimum amount of water necessary to obtain the desired consistency. Where needed to match the color of adjacent concrete, white portland cement shall be blended with regular cement as needed. The minimum compressive strength at 28 days shall be 4000 psi, unless indicated otherwise.
2. Cement grout materials shall be as indicated in SECTION 03300 – Cast-in-Place Concrete.

B. Non-Shrink Grouts (Cement Based):

1. General:
 - a. Cement Based Non-shrink grout shall be a prepackaged, inorganic, fluid, non-gas-liberating, non-ferrous, grout, requiring only the addition of water.
 - b. MANUFACTURER's instructions shall be printed on each bag or other container in which the materials are packaged. The specific formulation for each class of non-shrink grout indicated herein shall be that recommended by the MANUFACTURER for the particular application.
 - c. Grout shall not contain chlorides or additives, which may contribute to corrosion.

- d. Grout shall be formulated to be used at any consistency from fluid to plastic.
- e. Non-Shrink grout shall have the following minimum properties when tested at a fluid consistency at 28 days:

Tensile Splitting Strength	ASTM C496	500 psi minimum
Flexural Strength	ASTM C580	1000 psi minimum
Bond Strength (concrete to grout)	ASTM C882 modified	1900 psi minimum

- f. Grout shall be certified for use in marine environments

2. Class I Non-Shrink Grout:

- a. Class I Non-Shrink Grout shall have a minimum 28-day compressive strength of 5000 psi, when mixed at a fluid consistency.
- b. Class I Non-Shrink grout shall meet the requirements of ASTM C1107, Grade B or C, when mixed to fluid, flowable and plastic consistencies.
- c. Grout shall have a maximum early age height change of 4.0 percent expansion, and shall have no shrinkage (0.0 percent) in accordance with ASTM C827. The grout when tested shall not bleed or segregate at maximum allowed water.
- d. Grout shall have no shrinkage (0.0 percent) and a maximum of 0.3 percent expansion in the hardened state when tested in accordance with ASTM C1090.
- e. Provide certification together with independent test data that the expansion at 3 or 14 days does not exceed the 28-day expansion and that its non-shrink property is not based on gas production or gypsum expansion.

3. Class II Non-Shrink Grout:

- a. Class II Non-Shrink grout shall be a high precision, fluid, extended working time grout. The minimum 28-day compressive strength shall be 7500 psi, when mixed at a fluid consistency.
- b. Grout shall have a maximum early age height change of 4.0 percent expansion, and shall have no shrinkage (0.0 percent) in accordance with ASTM C827.
- c. Grout shall have no shrinkage (0.0 percent) and a maximum of 0.3 percent expansion in the hardened state when tested in accordance with ASTM C1090.
- d. Class II grout shall have an extended working time of 30 minutes minimum when mixed to a fluid consistency as defined in ASTM C827 at temperature extremes of 45 to 90 degrees F in accordance with ASTM C1107.
- e. Class II Non-Shrink grouts shall meet the requirements of ASTM C1107; Grade B or C when tested using the amount of water needed to achieve fluid consistency per ASTM C939.
- f. The grout when tested shall not bleed or segregate at maximum allowed water.
- g. Provide certification that its non-shrink property is not based on gas production or gypsum expansion.

C. Non-Shrink Epoxy Grout:

- 1. Non-Shrink Epoxy grout shall be a flowable, non-shrink, 100 percent solids system. The epoxy grout system shall have three components: resin, hardener, and specially blended aggregate, all premeasured and prepackaged. The resin component shall not contain any non-reactive diluents. Resins containing butyl glycidyl ether (BGE) or other highly volatile and hazardous reactive diluents are not acceptable. Variation of component ratios is not permitted unless specifically recommended by the MANUFACTURER. MANUFACTURER's instructions shall be printed on each container in which the materials are packaged.

2. Epoxy grout shall have a maximum early age height change of 4.0 percent expansion, and shall have no shrinkage (0.0 percent) in accordance with ASTM C827, (modified for epoxy grouts by using an indicator ball with a specific gravity between 0.9 and 1.1).
3. Epoxy grout shall have a negligible (less than 0.0006 in/in) length change after hardening, and a coefficient of thermal expansion less than 0.00003 in/in F when tested according to ASTM C531.
4. The epoxy grout shall develop a minimum compressive strength of 9000 psi in 24 hours and 13,000 psi in seven days when tested in accordance with ASTM C579, method B.
5. The mixed epoxy grout shall have a minimum working life of 90 to 120 minutes at 70 degrees F.
6. The effective bearing area shall be a minimum of 95% EBA in accordance with ASTM C1339.
7. The chemical formulation of the epoxy grout shall be that recommended by the MANUFACTURER for the particular application. Do not reduce aggregate loading or add solvents to increase flowability.
8. Non-Shrink Epoxy grout shall have the following minimum properties when tested at seven (7) days:

Bond Strength to Concrete	ASTM C882 modified	3000 psi minimum
Bond Strength to Steel	ASTM C882 modified	1700 psi minimum
Flexural Strength	ASTM C580	2500 psi minimum
Tensile Strength	ASTM C307	2000 psi minimum

D. Epoxy Anchor Grout:

Class C - for use above 60 degrees F

1. Epoxy anchor grout shall be a non-sag paste conforming to ASTM C881 Type IV, Class C, Grade 3 with the exception of gel time.
2. Heat deflection temperature per ASTM D648 shall be a minimum 120 degrees F.
3. MANUFACTURER shall certify that the epoxy grout will maintain 90 percent of its strength up to a temperature of 125 degrees F.
4. Grout shall come in a two-chambered cartridge with a metering system that provides the proper ratio of hardener and resin. The grout shall also come with a static mixer nozzle to thoroughly mix the hardener and resin together.
5. Epoxy anchor grout shall be capable of being used in submersed applications once cured.
6. Compressive strength per ASTM D695 shall be 10,000-psi minimum.
7. In vertical and overhead locations, anchor seal plugs shall be used.
8. If the average working or operating temperature will be over 100° F or in a high fire risk area, use cement based non-shrink grout and oversized holes.
9. Embedment of adhesive anchors/rebar shall be deep enough to develop the anchor/rebar. Embedment shall not exceed 67% of the member depth.

E. Topping Grout and Concrete/Grout Fill:

1. Where fill is thicker than three (3) inches, use structural concrete, as specified in SECTION 03300, may be used if approved by the CITY.
2. Grout for topping of slabs and concrete/grout fill for built-up surfaces of tank, channel, and basin bottoms shall be composed of cement, fine aggregate, coarse aggregate, water, and admixtures proportioned and mixed as specified herein. All materials and procedures indicated for normal concrete in SECTION 03300, shall apply unless indicated otherwise.

3. Topping grout and concrete/grout fill shall contain a minimum of 564 pounds of cement per cubic yard with a maximum water cement ratio of 0.45.
4. Coarse aggregate shall be graded as follows:

U.S. STANDARD SIEVE SIZE	PERCENT BY WEIGHT PASSING
1/2"	100
3/8"	90-100
No. 4	20-55
No. 8	5-30
No. 16	0-10
No. 30	0

5. Final mix design shall be as determined by trial mix design as indicated in SECTION 03300, except that drying shrinkage tests are not required.
6. Strength: Minimum compressive strength of topping grout and concrete/grout fill at 28 days shall be 4000 psi.

2.03 CURING: Curing materials shall be as specified in SECTION 03300, and as recommended by the MANUFACTURER of prepackaged grouts.

2.04 CONSISTENCY:

- A. The consistency of grouts shall be that necessary to completely fill the space to be grouted for the particular application. Dry pack consistency is such that the grout is plastic and moldable but will not flow. Where "dry pack" is called for in the Contract Documents, it shall mean a grout of that consistency; the type of grout to be used shall be as indicated herein for the particular application.
- B. The slump for topping grout and concrete/grout fill shall be adjusted to match placement and finishing conditions but shall not exceed four (4) inches.

2.05 MEASUREMENT OF INGREDIENTS:

- A. Measurements for cement grout shall be made accurately by volume using containers. Shovel measurements shall not be allowed.
- B. Prepackaged grouts shall have ingredients measured by means recommended by the MANUFACTURER.

PART 3 - EXECUTION

3.01 GENERAL:

- A. Grout shall not be placed until base concrete or masonry has attained its design strength, unless authorized otherwise by the CITY.
- B. When cementitious grouts are used on concrete surfaces, the concrete surface shall be saturated with water for 24 hours prior to placement. Upon completion of saturation period excess water shall be removed with clean, oil free compressed air prior to grouting. Concrete substrate shall not be wet prior to placement of epoxy grouts.
- C. Surface preparation, curing, and protection of cement grout shall be in accordance with SECTION 03300. The finish of the grout surface shall match that of the adjacent concrete unless otherwise indicated.
- D. All surfaces that will be in contact with grout shall be free of dirt, loose rust, oil, wax, grease, curing compounds, laitance, loose concrete or other deleterious materials.
- E. Shade the WORK Sites from sunlight for at least 24 hours before and 48 hours after grouting.
- F. Contact the grout MANUFACTURER's representative for assistance on hot and cold weather grouting techniques and precautions if applicable.

3.02 GROUTING PROCEDURES:

- A. General: All mixing, surface preparation, handling, placing, consolidation, curing, and other means of execution for prepackaged grouts shall be done according to the instructions and recommendations of the MANUFACTURER.
- B. All structural, equipment, tanks, and piping support bases shall be grouted, unless indicated otherwise.
 - 1. The original concrete shall be blocked out or finished off a sufficient distance below the plate to provide for a minimum one-inch thickness of grout, or a thickness as indicated on the Drawings.
 - 2. After the base plate has been set in position at the proper elevation by steel wedges or double nuts on the anchor bolts, the space between the bottom of the plate and the original pour of concrete shall be filled with non-shrink-type grout. The mixture shall be of a fluid consistency and poured continuously into the space between the plate and the base concrete. Forms for grout shall be tight against all surfaces, and joints shall be sealed as recommended by the grout MANUFACTURER to be liquid-tight. Forms shall be coated as recommended by the grout MANUFACTURER for easy form release. Where this method of placement is not practical or where required by the CITY, alternate grouting methods shall be submitted for acceptance by the CITY.
- C. Drilled anchors and Reinforcing Bars:
 - 1. General: Drilled anchors and reinforcing bars shall be installed in strict accordance with the MANUFACTURER's instructions. Holes shall be roughened with a brush on a power drill, and cleaned. Drilled anchors shall not be installed until the concrete has reached the required 28-day compressive strength. Anchors shall not be loaded until the grout has reached its indicated strength in accordance with the MANUFACTURER's instructions.
 - 2. Epoxy Adhesive Anchors:
 - a. Grout shall be proportioned and mixed with automatic equipment.
 - b. Unless otherwise indicated, embedment shall be sufficient to develop the ultimate tensile strength of the anchor or reinforcing bar per the AISC Manual of Steel Construction and ACI 318, Appendix D., but shall not be less than eight (8) diameters for threaded rod, or 12 diameters for reinforcing or smooth bars.
 - c. The hole diameter shall be as recommended by the epoxy MANUFACTURER but shall be no larger than 0.25 inch greater than the diameter of the outer surface of the bolt threads or the reinforcing bar deformations.
 - d. Holes shall be drilled by methods that do not interfere with the proper bonding of the epoxy.
 - e. Existing reinforcing steel in the vicinity of the proposed holes shall be located prior to drilling. The location of holes shall be adjusted to avoid drilling through or nicking any existing reinforcing bars.
 - f. Holes shall be blown clean with clean, dry compressed air to remove all dust and loose particles. Holes shall be dry.
 - g. Reinforcing bars and anchors shall be installed per the MANUFACTURER's written installation instructions.
 - 3. Cement Based Non-Shrink Grout:
 - a. In places of high temperature or fire hazard, anchor bolts shall be grouted in using Cement Based Non-Shrink Grout, Class I.
 - b. Unless otherwise indicated, embedment shall be sufficient to develop the ultimate tensile strength of the anchor or reinforcing bar per the AISC Manual of Steel Construction and ACI 318, Appendix D., but shall not be less than 16 diameters for threaded rod, or 24 diameters for reinforcing or smooth bars.

- c. When the bolt diameter is one (1) inch or less, the hole diameter should be a minimum of two inches. When the bolt's diameter is greater than one inch, the hole diameter should be at least twice the bolt diameter.
- d. Drilled holes shall be saturated with water for not less than 24 hours before installation of anchor/rod/rebar.
- e. The non-shrink grout should be placed in the holes in a non-sag (trowellable) consistency. The grout should be placed in the holes before the anchor and then the anchor inserted and vibrated to ensure proper coverage.

D. Topping Grout and Concrete/Grout Fill:

- 1. All mechanical, electrical, and finish WORK shall be completed prior to placement of topping or concrete/grout fill. To ensure bonding to the base slab, the base slab shall be given an exposed aggregate finish. Alternatively, where accepted by the CITY, the base slab shall be given a roughened textured surface by a close-spaced rake while the surface is green. After curing, high pressure washing shall expose the aggregates and produce not less than a 3/16-inch amplitude roughness. Jackhammers or chipping hammers shall not be used.
- 2. The minimum thickness of grout topping and concrete/grout fill shall be one inch. Where the finished surface of concrete/grout fill is to form an intersecting angle of less than 45 degrees with the concrete surface it is to be placed against, a key shall be formed in the concrete surface at the intersection point. The key shall be a minimum of 3-1/2-inches wide by 1-1/2-inches deep.
- 3. The base slab shall be thoroughly cleaned and wetted to saturated surface dry (SSD) condition per International Concrete Repair Institute Standards for Surface Preparations, prior to placing topping and fill. No topping concrete shall be placed until the slab is completely free from standing pools or ponds of water. A thin coat of neat cement grout shall be broomed into the surface of the slab just before topping or fill placement. The neat cement grout shall not be allowed to dry before topping placement. If it does dry, it must be immediately removed using wet stiff brooms and reapplied. The topping and fill shall be compacted by rolling or thorough tamping, brought to established grade, and floated. Grouted fill for tank and basin bottoms where scraping mechanisms are to be installed shall be screeded by blades attached to the revolving mechanism of the equipment in accordance with the procedures outlined by the equipment MANUFACTURER after the grout is brought to the established grade. Coat surface with evaporation retardant as needed to prevent plastic shrinkage cracks.
- 4. Topping grout placed on sloping slabs shall proceed uniformly from the bottom of the slab to the top, for the full width of the placement.
- 5. The surface shall be tested with a straight edge to detect high and low spots, which shall be immediately eliminated. When the topping and/or fill have hardened sufficiently, it shall be steel troweled to a smooth surface free from pinholes and other imperfections. An approved type of mechanical trowel may be used as an assist in this operation, but the last pass over the surface shall be by hand troweling. During finishing, no water, dry cement, or mixture of dry cement and sand shall be applied to the surface.
- 6. As soon as topping or fill finishing is completed, coat surface with curing compound. After the topping is set and sufficiently hard in clarifiers and where required by the CITY, the tank shall be filled with sufficient water to cover the entire floor for 14 days.

3.03 CONSOLIDATION: Grout shall be placed in such a manner, for the consistency necessary for each application, to assure that the space to be grouted is completely filled.

3.04 CURING: Cement based grouts shall be cured per SECTION 03300 and per the MANUFACTURER's recommendations.

3.05 FIELD TESTING:

- A. Compression test specimens will be taken during construction from the first placement of each type of grout, and at intervals thereafter as selected by the CITY to ensure continued compliance with these specifications. The specimens will be made by the CITY or its representative.
- B. Compression tests and fabrication of specimens for cement grout and cement based non-shrink grout will be performed in accordance with ASTM C109 (Using 2-in or 50 mm Cube Specimens), at intervals during construction selected by the CITY. A set of three specimens will be made for testing at seven (7) days, 28 days, and each additional time period as appropriate.
- C. Compression tests and fabrication of specimens for topping grout, and concrete/grout fill will be performed as specified in SECTION 03300, at intervals during construction as selected by the CITY.
- D. All material, already placed, which fails to meet the requirements of these specifications, is subject to removal and replacement at the cost of the CONTRACTOR.
- E. The cost of all laboratory tests on mortar and grout will be borne by the CITY, but the CONTRACTOR shall assist the CITY in obtaining specimens for testing. However, the CONTRACTOR shall be charged for the cost of any additional tests and investigation on WORK performed which does not meet the specifications. The CONTRACTOR shall provide all services necessary to conduct the compression tests.
- F. Compression tests and fabrication of specimens for epoxy grouts will be performed in accordance with ASTM C579, Method B, at intervals during construction as selected by the CITY. A set of three specimens will be made for testing at seven (7) days, and each earlier time period as appropriate.

3.06 CONSTRUCTION TOLERANCES: Construction tolerances shall be as indicated in SECTION 03300, unless indicated otherwise.

END OF SECTION

SECTION 03700 CONCRETE RESTORATION

PART 1 - GENERAL

1.01 SCOPE:

A. Summary of Work:

1. The CONTRACTOR shall provide all labor, materials and equipment to perform concrete restoration and repairs as indicated in the Contract Documents. The WORK may include, but not be limited to repairing spalled areas, sealing of cracks, replacement of corroded reinforcement steel and replacement of expansion joint materials.
2. All pipes which penetrate concrete members and which the Contract Documents require to be removed shall have the remaining holes repaired as specified herein.
3. All existing openings in concrete members, which the Contract Documents require to be filled, shall be repaired as specified herein.
4. All pipes and other items to be passed through and/or be embedded in concrete members shall be installed as specified herein.
5. All damage to concrete and concrete surfaces which results from the required removal of embedded items, from any construction activity required by the Contract Documents, from any other CONTRACTOR activities, or which existed previously in structures identified to be repaired by the Contract Documents shall be repaired as specified herein.
6. The following existing structure shall be repaired:
 - a) George T. Lohmeyer Regional Waste Water Treatment Plant, Pre-Treatment Building.
7. All cracks in below grade and/or water bearing members shall be repaired over their full length as indicated by the CITY and as specified herein at all new structures included in these Contract Documents.
8. Deteriorated Concrete:
 - a. All the concrete surfaces which show signs of deterioration shall be repaired.
 - b. The level of deterioration of the concrete varies with location within each of the listed structures.

B. Related Work Specified Elsewhere:

1. SECTION 01300 - Submittals
2. SECTION 02050 - Demolition
3. SECTION 03100 - Concrete Formwork and Accessories
4. SECTION 03200 - Concrete Reinforcement
5. SECTION 03300 - Cast-in-Place Concrete
6. SECTION 03312 – Self-Consolidated Concrete (SCC)
7. SECTION 03600 – Grout
8. SECTION 09900 – Protective Coating

1.02 APPLICABLE STANDARDS AND PUBLICATIONS:

- A. Standards or Codes: The edition of the standards of the organizations listed below in effect at the time of the advertisement for bids form a part of this specification to the extent referenced. See the various paragraphs for the specified standard. In the case of a conflict between the requirements of this SECTION and those of the listed document, the requirements of this SECTION shall prevail.
1. American Concrete Institute (ACI)
 - a. 546R – Guide to Concrete Repair
 2. American Society of Testing and Materials (ASTM)
 - a. C109 – Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2-in. or [50-mm] Cube Specimens)
 - b. C157 - Standard Test Method for Length Change of Hardened Hydraulic-Cement Mortar and Concrete
 - c. C881 – Standard Specification for Epoxy-Resin-Base Bonding Systems for Concrete
 - d. C882 - Standard Test Method for Bond Strength of Epoxy-Resin Systems Used with Concrete by Slant Shear
 3. American Welding Society (AWS)
 - a. D1.4 - Structural Welding Code - Reinforcing Steel
 4. International Concrete Repair Institute (ICRI)
 - a. 03730 - Guide for Surface Preparation for the Repair of Deteriorated Concrete Resulting From Reinforcing Steel Corrosion

1.03 DEFINITIONS: (Not Applicable)

1.04 SUBMITTALS: The CONTRACTOR shall submit the following in accordance with SECTION 01300:

- A. Materials specification sheets including product information and recommended placement procedures and material safety data sheets shall be submitted for all products used for this Project.
- B. MANUFACTURER's warranty.
- C. If reinforcement steel is spliced by welding at any location, the CONTRACTOR shall submit mill test reports which shall contain the information necessary for the determination of the carbon equivalent per AWS D1.4. The CONTRACTOR shall submit a written welding procedure for each type of weld for each size of bar which is to be spliced by welding; merely a statement that AWS procedures will be followed is not acceptable.

1.05 QUALIFICATIONS:

- A. Applicators shall be licensed in the State of Florida for no less than five (5) years and shall be certified by the repair product MANUFACTURER.
- B. A pre-installation meeting shall be held with applicator, material supplier and the CITY prior to commencement of the WORK.
- C. If reinforcement steel is spliced by welding at any location, the CONTRACTOR shall submit certifications of procedure qualifications for each welding procedure and certification of welder qualifications, for each welding procedure, and for each welder performing the WORK.

1.06 RESPONSIBILITIES: (Not Applicable)

1.07 CERTIFICATIONS AND TESTING:

A. Field Tests of Cement Based Grouts:

1. Compression test specimens will be taken during construction from the first placement of each type of mortar or grout and at intervals thereafter as selected by the CITY to insure continued compliance with these specifications. The test specimens will be prepared by the CITY or its representative.
2. Compression tests and fabrication of specimens for repair mortar and non-shrink grout will be performed as specified in ASTM C109. A set of three (3) specimens will be prepared for testing at seven (7) days, 28 days, and additional time periods as appropriate.
3. All material, already placed, which fails to meet the requirements of these specifications, is subject to removal and replacement at the cost of the CONTRACTOR.
4. The cost of all laboratory tests on mortar and grout will be borne by the CITY, but the CONTRACTOR shall assist the CITY in obtaining specimens for testing. The CONTRACTOR shall be charged for the cost of any additional tests and investigation on WORK performed which does not meet the specifications. The CONTRACTOR shall supply all materials necessary for fabricating the test specimens.
5. Repair concrete shall be tested as required in SECTION 03300.
6. Epoxy shall be tested as required in SECTION 03600.
7. Self-consolidated concrete (SCC) shall be tested as required in SECTION 03312.

1.08 INSPECTION COORDINATION: (Not Applicable)

1.09 WARRANTY:

- A. The MANUFACTURER shall warrant the EQUIPMENT, MATERIALS and PRODUCTS specified in this SECTION against defective materials and workmanship with the MANUFACTURER's standard warranty, but for no less than five (5) years from the date of Substantial Completion, and as described in Article 13 of Section 00700 - General Terms and Conditions. If the MANUFACTURER's standard warranty is less than the stipulated period, the MANUFACTURER shall provide a special MANUFACTURER's extended warranty for the stipulated period, or provide a Maintenance Bond, to extend the MANUFACTURER's warranty period for the stipulated period.
- B. The CONTRACTOR shall warranty the WORK against defects for one (1) year from the date of Substantial Completion and as described in Article 13 of Section 00700 - General Terms and Conditions.

PART 2 - MATERIALS

2.01 DELIVERY AND STORAGE:

- A. All MANUFACTURER's materials shall be delivered in original packaging.
- B. Materials shall be stored in a covered, protected area away from moisture and damp surroundings.

2.02 CONCRETE MATERIALS:

- A. Cement: Type II Portland cement shall be used unless noted otherwise. Where repairs are made on wall surfaces open to view and above normal water surface elevations, white

Portland cement shall be blended with the Type II cement as needed to match the color of the adjacent existing concrete surface.

- B. Repair Concrete: Repair concrete, where required, shall be structural concrete with one-inch maximum coarse aggregate meeting the requirements of SECTION 03300. The minimum repair thickness shall be two (2) inches.
- C. Cement Grout shall meet the requirements found in SECTION 03600. The minimum repair thickness shall be one (1) inch.
- D. Cement Based Non-Shrink Grout (Class I & II) shall meet the requirements found in SECTION 03600.
- E. Self-consolidating Concrete (SCC)
 - 1. SSC shall meet the requirements of SECTION 03312, except as modified herein.
 - 2. The minimum compressive strength at 28 days shall be 6,500 pounds per square inch (psi).
 - 3. The minimum repair thickness shall be three (3) inches.
- F. Repair Mortar shall be a prepackaged cement based product specifically formulated for the repair of surface defects. Where the basic repair material has different formulations for application conditions such as overhead, the formulation recommended by the MANUFACTURER for the specific application conditions shall be used. The minimum repair thickness shall be 0.50-inch. The repair mortar shall have the following properties:

Physical Property	Value	ASTM Standard
Compressive Strength (min)		C109
at 1 day	4000 psi	
at 28 days	6000 psi	
Shrinkage (max)	0.0 percent	C157
at 28 days drying		
Bond Strength (min)		C882
at 1 day	1500 psi	
at 7 days	2500 psi	

2.03 EPOXY MATERIALS:

- A. Non-Shrink Epoxy Grout shall meet the requirements found in SECTION 03600.
- B. Epoxy used for crack injection shall be a low viscosity, moisture insensitive material specially formulated for that use. It shall have a minimum bond strength of 2,500 psi when tested per ASTM C882 at fourteen (14) days, moist cured.

2.04 MISCELLANEOUS MATERIALS:

- A. Sealant for hydraulic structures shall be a polyurethane polymer meeting the requirements found in SECTION 03100. All other joint sealants and seals shall conform to Federal Spec. TT-S00227, type II for vertical joints, Class A.
- B. Bond breaker material shall be polyethylene tape, coated paper, metal foil, or similar type materials.

- C. Joint filler material shall be compressible, non-shrink, non-reactive with sealant, and non-absorptive material type such as extruded butyl or polychloroprene foam rubber.
- D. Formwork, where needed, shall meet the requirements of SECTION 03100.
- E. Reinforcement Steel and reinforcement couplers, where required, shall meet the requirements of SECTION 03200.
- F. Anti-corrosive protection/bonding agent for steel reinforcement shall be Sika Armatec 110 Epocem..
- G. Concrete sealer shall be a clear, penetrating, water-based silane sealer for concrete and masonry surfaces.

PART 3 - EXECUTION

3.01 GENERAL:

- A. Where repairs are made on wall surfaces open to view and above normal water surface elevations, the installed repair material shall match the adjacent concrete surface in color and texture.
- B. Surface Preparation:
 - 1. The entire area to be repaired shall be cleaned of all laitance and foreign material by chipping using lightweight demolition hammers, not to exceed 15 pounds in weight, and/or a heavy sandblasting. All removals are to be performed in accordance with ICRI guidelines. The surface shall be further roughened as specified herein. Where non-shrink grout or repair mortar is used, any additional surface preparation steps recommended by the MANUFACTURER shall be performed.
 - 2. Where repair concrete, or cement grout is used or where the repair mortar or non-shrink grout MANUFACTURER recommends a wet or saturated surface, water shall be delivered to the surface continuously for a minimum of four (4) hours. Where large surface areas are to be repaired, fog spray nozzles mounted on stands shall be provided in sufficient numbers such that the entire surface to be repaired is in contact with the fog spray cloud. The concrete shall be prevented from drying until after the grouting operation is completed. Unrepaired surfaces shall be rewetted by water spray on at least a daily basis. Should more than four (4) days elapse without rewetting the unrepaired surfaces, the original saturating procedure shall be repeated. All standing water in areas to be repaired shall be removed prior to placement of repair material. Means to remove excess water from the structure shall be provided.
 - 3. Where the repair material MANUFACTURER recommends the use of an epoxy bonding agent, the recommendations of both the repair material and bonding agent MANUFACTURERS shall be followed.
- C. Care shall be taken to fully consolidate the repair material, completely filling all portions of the area to be filled.
- D. The repair surface shall be brought into alignment with the adjacent existing surfaces to provide a uniform, even surface. The repair surface shall match adjacent existing surfaces in texture and shall receive any coatings or surface treatments which had been provided for the existing surface.
- E. The CONTRACTOR shall halt WORK when weather conditions may detrimentally affect the quality of the repair. Follow MANUFACTURER's instructions for weather conditions and temperature ranges.

- F. Curing:
 - 1. Curing of repair mortar and non-shrink grout shall be in accordance with the MANUFACTURER's recommendations except that the minimum cure period shall be three (3) days.
 - 2. Curing for SCC shall be in accordance with SECTION 03312.
 - 3. Curing of other materials shall be in accordance with Method 4 of SECTION 03300.
- G. All products are to be mixed following the specific guideline of each particular product.
- H. All products are to be applied by following the specified data sheets of each particular product.

3.02 TREATMENT OF SURFACE DEFECTS:

- A. Surface defects are depressions in a concrete surface which do not extend all the way through the member. The depressions can result from the removal of an embedded item, the removal of an intersecting concrete member, physical damage, unrepaired rock pockets created during original placement, or spalls from corroded reinforcing steel or other embeds.
- B. Preparation:
 - 1. All loose, damaged concrete shall be removed by chipping to sound material.
 - 2. Where existing reinforcing bars are exposed, concrete shall be removed to a minimum of one (1) inch all around the bars. If the existing bars are cut through, cracked, or the cross sectional area is reduced by more than 25 percent, the CITY shall be notified immediately.
 - 3. The perimeter of the damaged area shall be score cut to a minimum depth of 0.5-inch and a maximum depth so as to not cut any existing reinforcing steel. Existing concrete shall be chipped up to the score line so that the minimum thickness of repair mortar is 0.5-inch.
- C. Repair Material:
 - 1. Repair of surface defects in members which are normally in contact with water or soil or in the interior surfaces of enclosed chambers which contain water shall be made only with repair mortar.
 - 2. Repair of other surface defects may be by the application of repair mortar, repair concrete, SSC or cement grout, as appropriate.

3.03 PATCHING OF HOLES IN CONCRETE:

- A. General:
 - 1. For the purposes of this SECTION, holes are defined as penetrations completely through the concrete member and with interior surfaces approximately perpendicular to the surface of the existing member. Any interior surface areas which are inclined and do not meet this criteria shall be chipped as needed to meet this requirement.
 - 2. The perimeter of all holes at the surface shall form a regular shape composed of curved or straight line segments. The minimum depth of placement for the material used shall be provided at all locations. The existing concrete shall be scored by sawcutting and chipped as needed to meet this requirement.
 - 3. The interior surface of holes less than 12-inches in diameter shall be roughened to a minimum of 0.125-inch amplitude. Larger holes shall be roughened to a minimum of 0.25-inch amplitude.

4. At all holes which are not filled with repair mortar or non-shrink grout or where the repair material MANUFACTURER recommends it, the existing surface to be repaired shall be coated with an epoxy bonding agent.
 5. Where a face of the member is exposed to view and the repair material cannot be adjusted to match the color of the existing concrete, the repair material shall be held back two (2) inches from the surface. The remaining two (2) inches shall be filled with a color adjusted cement grout.
- B. Patching Small Holes:
1. Holes which are less than 12-inches in their least dimension and extend completely through concrete members, shall be filled with repair mortar or non-shrink grout.
 2. All holes in members which are normally in contact with water or soil shall be filled with Class I non-shrink grout as required in SECTION 03600.
- C. Patching Large Holes:
1. Holes which are larger than 12-inches in their least dimension shall be filled with repair concrete, repair mortar, or non-shrink grout.
 2. Large holes which are normally in contact with water or soil and are not filled with Class I non-shrink grout shall be provided with a pre-formed hydrophilic waterstop which is placed in a groove, approximately 0.25-inch deep. The groove shall be ground into the interior edge of the hole at the center of the wall and shall provide a smooth surface in which to place the waterstop. Alternately, the pre-formed hydrophilic waterstop shall be bonded to the surface using an epoxy grout that completely fills all voids and irregularities beneath the waterstop material. Installation of the waterstop shall be per the requirements of SECTION 03100.
 3. Reinforcing steel shall be provided in layers matching existing reinforcement location except that concrete cover required in the contract documents for the service condition shall be provided.
 4. For holes smaller than 48-inches, reinforcement shall be a minimum of #5 bars at 12-inches on center in each layer required. At all holes larger than 30-inches, the reinforcement shall be drilled and grouted into the existing concrete.
 5. For holes larger than 48-inches, see the Drawings for reinforcement details.

3.04 PATCHING OF LINED HOLES:

- A. This SECTION applies to those openings that have embedded material over all or a portion of the inside edge. The requirements for repairing holes in concrete specified above shall apply as modified herein. The CITY will determine when the embedded material is allowed to remain.
- B. Where embedded material is allowed to remain, it shall be trimmed back a minimum of two (2) inches from the concrete surface. The embedded material shall be roughened or abraded to promote good bonding to the repair material. Any substance that interferes with good bonding shall be completely removed.
- C. Any embedded item that is not securely and permanently anchored into the concrete shall be completely removed.
- D. Embedded items which are larger than 12-inches in their least dimension shall be completely removed unless they are composed of a metal to which reinforcing steel can be welded. Where reinforcement is required, it shall be welded to the embedded metal.

- E. The following additional requirements apply to concrete members which are in contact with water or soil:
 - 1. Lined openings that are less than four (4) inches in their least dimension shall be filled with epoxy grout.
 - 2. Lined openings that are greater than four (4) inches but less than 12-inches in their least dimension shall be coated with an epoxy bonding agent prior to being filled with Class I non-shrink grout.
 - 3. Lined openings which are greater than 12-inches in their least dimension shall be coated with an epoxy bonding agent and shall have a Bentonite waterstop bonded to the interior of the opening with epoxy adhesive prior to being filled with any approved repair material.

3.05 INSTALLATION OF PIPES AND FRAMES:

- A. The following applies to the installation of permanent pipes and frames in openings cut into existing concrete members.
- B. The opening shall be cut as specified in SECTION 02050 to a size which is a minimum of one (1) inch and a maximum of three (3) inches larger than the outside edge of the embedded item. At openings which are greater than 24-inches in their least dimension, a keyway shall be chipped into the center of the wall. The keyway shall be a minimum of 1.5-inches in depth and minimum of three (3) inches to a maximum of 1/3 the member thickness in width. All surfaces, except at the keyway shall be perpendicular to the member surface as specified herein for patching holes.
- C. The embedded item shall have a flange or other positive means of anchorage into the repaired member. At members which are in contact with soil or water, a continuous waterstop flange shall be provided around the embed. Where concrete pipe is to be embedded, a pre-formed hydrophilic waterstop shall be provided around the pipe at the wall centerline.
- D. The interior surface of the opening shall be roughened to a minimum amplitude of 1/4-inch. The surface of the embed to be in contact with concrete shall be sandblasted clean to promote good bonding to the repair material.
- E. The space between the frame and the existing concrete shall be filled with Class I non-shrink grout.
- F. Where a face of the member is exposed to view and the repair material cannot be adjusted to match the color of the existing material, the repair material shall be held back two (2) inches from the surface. The remaining two (2) inches shall be filled with a color adjusted cement grout.

3.06 NON-FIXED INSTALLATION OF PIPES:

- A. The following applies to the installation through existing concrete members of piping which is to be sealed with adjustable linked seals or packing and sealant. When more appropriate, the CITY may require the installation of a galvanized steel sleeve instead of the core drilled hole as specified by the following.
- B. A core drilled opening shall be sized to permit installation of the required seal. It shall be located so as to minimize the cutting of existing reinforcing steel.
- C. Where linked seals are to be installed, the interior surface of the opening shall be coated with epoxy to a minimum thickness of 1/8-inch. The surface shall be smooth and even so as to promote a good seal.

- D. Where packing and sealant are required, all exposed reinforcing bars shall be sealed as specified in SECTION 02050. The surface of the cut concrete and the pipe shall be prepared as recommended by the sealant MANUFACTURER.

3.07 GENERAL CRACK REPAIR:

- A. All cracks identified by the CITY as caused by shrinkage shall be repaired with sealant as specified herein. At the CONTRACTOR's option, these cracks may be repaired with chemical grout as specified herein.
- B. All cracks which are not caused by shrinkage shall be repaired as indicated by the CITY.

3.08 SEALANT CRACK REPAIR: All cracks that may have developed shall be "vee'd" and filled with sealant conforming to the requirements of SECTION 03100. This repair method shall be done on the water bearing face of members. Prior to backfilling new structures, faces of members in contact with fill, which are not covered with a waterproofing membrane, shall also have cracks repaired as specified herein.

3.09 CHEMICAL GROUT CRACK REPAIR:

- A. Chemical grout shall be injected into all cracks as indicated by the CITY in those structures included in the Scope of Work listed herein. Installation instructions and recommendations by the chemical grout MANUFACTURER shall be followed.
- B. Location of Injection Ports: Injection ports shall be spaced as recommended by the chemical grout MANUFACTURER and as needed to insure complete penetration of the joint or crack with the grout. Spacing of injection ports shall not exceed two (2) feet.
- C. Drilling Ports: Holes for injection ports shall be drilled to the depth needed for proper distribution of the chemical grout. Care shall be taken to not damage any reinforcing steel.
- D. Port preparation: Holes for injection ports shall be cleaned of all debris and fitted with an injection fitting as provided by the MANUFACTURER of the chemical grout. The injection fittings shall be installed as per the MANUFACTURER's instructions and will remain in place until chemical grout injection work has been completed at that area. Caps or valves will be installed at the injection ports to prevent back flow of the uncured chemical grout after it has been injected.
- E. Chemical Grout Injection:
 - 1. The CONTRACTOR shall follow the instructions of the chemical grout MANUFACTURER and their representatives for all mixing and injection procedures.
 - 2. All cracks shall be sealed at the surface where needed to provide for complete penetration of the injected chemical grout and to prevent loss of material.
 - 3. Prior to chemical grout injection, water shall be injected into the ports in order to provide water for the reaction process and to verify continuity between adjacent ports. Water shall be injected into each of the ports until it begins to flow from an adjacent or nearby port.
 - 4. If the water injection procedure indicates the potential presence of voids within members or behind members resting against soil, the CITY shall be notified immediately.
 - 5. Beginning at the lowest injection port, in the case of vertical or inclined cracks, inject the chemical grout until the grout begins to flow from an adjacent or nearby port. Repeat the process until the crack is completely filled. In general, the port to port travel of the injection process will be from low to high in a continuous operation.

6. If port to port continuity does not occur at locations where continuity was verified through water injection, mark location and notify the CITY.
7. Avoid sudden application of high pressures during the injection process.
8. After completion of the grouting operation, all ports and surface sealing materials shall be removed so as to leave an undamaged surface.

3.10 EPOXY CRACK REPAIR:

- A. Epoxy shall be injected into all cracks in damaged concrete as indicated by the CITY in those structures included in the Scope of Work listed herein. Installation instructions and recommendations by the epoxy MANUFACTURER shall be followed.
- B. Cracks shall be injected with sufficient pressure to ensure full penetration of the epoxy but without causing further damage.
- C. The location, drilling, and preparation of ports for injection shall be as required for chemical grout herein.
- D. Epoxy Injection:
 1. The CONTRACTOR shall follow the instructions of the epoxy MANUFACTURER and their representatives for all mixing and injection procedures.
 2. All cracks shall be sealed at the surface where needed to provide for complete penetration of the injected epoxy and to prevent loss of material.
 3. Beginning at the lowest injection port, in the case of vertical or inclined cracks, inject the epoxy until it begins to flow from an adjacent or nearby port. Repeat the process until the crack is completely filled.
 4. If port to port continuity does not occur, mark the location and notify the CITY.
 5. Avoid sudden application of high pressures during the injection process.
 6. After completion of the injection operation, all ports and surface sealing materials shall be removed so as to leave an undamaged surface.

3.11 REPAIR OF DETERIORATED CONCRETE:

- A. This SECTION pertains to concrete which has been damaged due to corrosion of reinforcing steel, physical damage due to abrasion, and damage due to chemical attack. The only material acceptable for surface repair is repair mortar as specified herein. Where the repaired surface is to be subsequently covered with a PVC liner material, the finishing details shall be coordinated with the needs for installing the liner material.
- B. Surface Preparation:
 1. All loose, broken, softened, and acid contaminated concrete shall be removed by sandblasting and chipping down to sound, uncontaminated concrete.
 2. When the removal of deteriorated concrete is completed, the CONTRACTOR shall notify the CITY. Two weeks shall be scheduled for the CITY to inspect the surface, perform testing for acid contamination, determine if additional concrete must be removed, and to develop any special repair details that may be needed. Should it be determined that additional concrete must be removed to reach sound, uncontaminated material, another two week period shall be scheduled for further evaluation after the end of the additional removal.
 3. Additional surface preparation shall follow the recommendations of the repair mortar MANUFACTURER.

C. Repair Mortar Placement:

1. The procedures recommended by the MANUFACTURER for the mixing and placement of the repair mortar shall be followed.
2. After the initial mixing of the repair mortar, additional water shall not be added to change the consistency should the mix begin to stiffen.
3. Repair mortar shall be placed to a minimum thickness as recommended by the MANUFACTURER but not less than 0.50-inch. Should there be areas where less than the minimum repair mortar depth of concrete is removed, the CONTRACTOR may, at its option, remove additional concrete to attain the minimum repair mortar thickness or may place repair mortar so as to increase the original thickness of the member. In any case, repair mortar shall be added so that the minimum cover over existing reinforcing steel is two (2) inches. The CONTRACTOR shall not place repair mortar so as to create locally raised areas. Where there is a transition with wall surfaces which are not in need of repair, the repair mortar shall not be feathered at the transition. A score line shall be sawcut to not less than the minimum repair mortar depth and concrete chipped out to it to form the transition. Care shall be taken to not cut or otherwise damage any reinforcing steel.
4. The repair mortar shall be placed to an even, uniform plane to restore the member to its original surface. Tolerance for being out of plane shall be such that the gap between a 12-inch straight edge and the repair mortar surface does not exceed 0.125-inch and the gap between a 48-inch straight edge and the repair mortar surface does not exceed 0.25-inch. This shall apply to straight edges placed in any orientation at any location.

D. Finishing:

1. The repair mortar shall receive a smooth, steel trowel finish
2. When completed, there shall be no sharp edges. All exterior corners, such as at penetrations, shall be made with a one-inch radius. All interior corners shall be square except corners to receive PVC lining shall be made with a 2-inch repair mortar fillet.

E. Curing: Curing shall be performed as recommended by the repair mortar MANUFACTURER, except that the cure period shall be at least 24 hours and shall be by means of a continuous fog spray. If the MANUFACTURER recommends the use of a curing compound, no material shall be used that would interfere with the bond of the adhesive used for placing PVC lining, where required.

END OF SECTION

SECTION 06100 ROUGH CARPENTRY

PART 1 - GENERAL

1.01 SCOPE:

- A. Summary of Work: The Work of this Section shall consist of furnishing all labor, materials, and equipment necessary for all rough carpentry as shown on the drawings and specified herein.
- B. Related Work Specified Elsewhere:
 - 1. SECTION 03100 Concrete Formwork and Accessories

1.02 APPLICABLE PUBLICATIONS:

The following standard specifications shall apply to the work of this section as indicated:

- A. American Society for Testing Materials (ASTM).
- B. Southern Pine Inspection Bureau, Standard Grading Rules, latest edition, (SPIB).
- C. American Wood Preservers Institute (AWPI).

1.03 SUBMITTALS:

- A. Submit for review, properly identified product data on wood preservative treatments proposed.
- B. Furnish certificates from wood treating plant or material supplier that all rough lumber supplied conforms to referenced specifications. Certificates shall include grade, species and moisture.

1.04 WARRANTY:

- A. The MANUFACTURER shall warrant the EQUIPMENT, MATERIALS and PRODUCTS specified in this section against defective materials and workmanship with the MANUFACTURER'S standard warranty, but for no less than one year from the date of Substantial Completion, and as described in the General Terms and Conditions.
- B. The CONTRACTOR shall warrant the WORK against defects for one year from the date of Substantial Completion and as described in the General Terms and Conditions.

PART 2 - PRODUCTS

2.01 PRODUCT REQUIREMENTS:

- A. General Requirements:
 - 1. Sizes: Lumber sizes to conform to Prod. Std. PS 20 and unless otherwise specified to be surfaced on four sides. Sizes for materials other than lumber to conform to requirements of the rules or standards under which they are produced. Size references, unless otherwise specified, are nominal sizes, and actual sizes to be within manufacturing tolerances allowed by standard under which product is produced.
 - 2. Preservative Treatment:

- a. Wood members and plywood specified in this section to be preservative treated by pressure methods and so marked, in accordance with American Wood Preservers Institute Standards.
- b. Treatment shall be selected from one of the following:
 - i. DOT Sodium Borate (SBX)
 - ii. Alkaline Copper Quaternary (ACQ-C and ACQ-D with carbonate)
 - iii. Copper Azole (CBA-A and CA-B)
- c. Treatment of wood to be painted or to make contact with painted parts, and wood to which finishing materials will be fastened to be in accordance with AWPI Standards LP-2 or LP-4. Wood treated with oil-borne preservative to be clean, free from surface oil, and properly seasoned for use in building construction. Wood treated with water-borne preservatives to be air-dried or kiln dried to moisture content specified for lumber and marked with word "Dry." Treated wood that is cut to be brush-coated with preservative used in original treatment.

B. Performance Requirement:

- 1. Grading and Marking: Lumber and plywood to bear grade mark, stamp, or other identifying marks indicating grades of material and rules of standards under which they are produced. Such identifying marks on a material to be in accordance with rule or standard under which material is produced, including requirements for qualifications and authority of inspection organization, usage of authorized identification, and information included in identification.
 - a. Inspection agency for lumber shall be certified by Board of Review, American Lumber Standards Committee, to grade species used. Except for plywood and lumber, bundle marking or certificates will be permitted in lieu of marking each individual piece.
- 2. Moisture Content: Moisture content shall conform to the rules for the lumber association or the inspection bureau under which the lumber is graded but shall not exceed 15 percent for boards and dimensional lumber 2 inches or less in thickness.
 - a. At time lumber is delivered and installed in work the moisture content is to be as follows:
 - i. Treated lumber 2 inches or less in thickness: 15 percent maximum,
 - ii. Treated lumber over 2 inches in thickness: 18 percent maximum.
 - iii. Plywood: 18 percent maximum.
- 3. Delivery, Handling, and Storage:
 - a. Wood materials shall be securely bundled and shipped with adequate moisture-resistant covers to preclude damage by weather or handling during delivery, when stored, and during construction.
 - b. Wood materials that must be stored outdoors before immediate use shall be placed in orderly piles and stored on blocks above ground. Lumber shall be stored in stacks with provision for air circulation within stacks. Material shall be protected from the elements with moisture-resistant covers.

C. Materials of Construction:

- 1. Accessories and Nails:
 - a. Anchor Bolts: Galvanized steel, size as indicated, complete with nuts and washers.

- b. Bolts and Nuts: Lag, toggle, and miscellaneous bolts, and screws: Bolts and nuts shall be carbon steel, hot-dipped galvanized, of type and size, best suited for intended use, complete with nuts and washers, conforming to ASTM A 307. Lag screws or lag bolts shall be commercial steel, galvanized.
 - c. Clip Angles: Galvanized steel, 3/16 inch thick, size best suited for the intended use; or galvanized steel commercial clips designed for connecting wood members.
 - d. Concrete Expansion Anchors: All metal type of size best suited for intended use. Steel to be cadmium zinc plated. Stainless steel Tap-Con type screws may be used as an alternate to expansion anchors in concrete.
 - e. Nails: Size and type best suited for purpose, in accordance with ASTM F 1667-03 when applicable to type used. In general, 8-penny or larger nails to be used for nailing through 1 inch thick lumber and for toe nailing 2-inch thick lumber; 16-penny or larger nails to be used for nailing through 2-inch thick lumber.
 - f. Bar or Strap Anchors shall be steel conforming to ASTM A 36. Hot-dip galvanized coating shall be in accordance with ASTM A 123.
2. Miscellaneous Wood Members Species and Grade Table:

RULES

Species	NELMA	WCLB	WWP	SPIB
Douglas Fir-Larch		Standard No. 2	No. 3 Comm No. 2	
Hem – Fir		Standard No. 2	No. 3 Comm No. 2	
Southern Pine				No. 2 Board No. 1
Douglas Fir South		No. 3 Comm No. 2		
Eastern Hemlock	No. 3 Comm			
Tamarack	No. 2			

- a. Nonstress graded members to include plates, caps, bucks, studs, blocking, furring, grounds, nailers, sleepers, and cants. Members to be standard grade or No. 2 grade. Nonstress member grades to conform to National Grading Rule for Dimension Lumber established in conformance with Section 10 of Prod. Std. PS 20 and as applied in individual grading rules of applicable grading agencies. For species graded under other grading rules, grade used to be equivalent to grades outlined above. Sizes to be as follows unless otherwise shown.
3. General Use Plywood: Exterior type soft-wood plywood conforming with U.S. Department of Commerce PS 1-66, bearing APA grade mark in according with the American Plywood Association. Grade to be C-C plugged EXT-APA, or better. Thickness to be as indicated or as required.
4. Exterior Wood Buck Setting Compound: Vinyl emulsion type sealant, Vin-Lox Kaok Sealant, E-Bond Epo-Seal, or VIP Caulking and Bedding Compound.

PART 3 - EXECUTION

3.01 INSTALLATION:

- A. Members to be closely fitted, accurately set to required lines and levels, and rigidly secured in place. Nailing to be in accordance with the recommended Nailing Schedule as contained in the National Forest Products Association publication, Manual for House Framing. Where detailed nailing requirements are not specified, nail size and nail spacing to be sufficient to develop an adequate strength for connection without splitting members. Members to be framed for passage of ducts and pipes and not be cut, notched, or bored more than 1/4 of their depth without adequate and review reinforcing.
- B. Blocking to be provided as necessary for application of other materials or building items. Blocking to be cut to fit between framing members and rigidly nailed thereto.
- C. Washer shall be provided under bolt heads or nuts in contact with wood. Lumber shall be bored to receive bolts.

END OF SECTION

SECTION 09900 PROTECTIVE COATINGS

PART 1 - GENERAL

1.01 SCOPE:

- A. Summary of Work: The CONTRACTOR shall provide coating on exterior and interior surfaces throughout the Project, and which are listed in PART 2, with systems specified on "coating system" sheets at the end of this SECTION.
- B. Regulatory Requirements: In addition to requirements specified elsewhere for environmental protection, provide coating materials that conform to the restrictions of the local and regional jurisdiction. Notify the CITY of any coating specified herein that fails to conform to the requirements for the location of the Project or location of application.
 - 1. Lead Content: Use only coatings that are totally lead free.
 - 2. Chromate Content: Do not use coatings containing zinc-chromate or strontium chromate.
 - 3. Asbestos Content: Materials shall not contain asbestos.
 - 4. Mercury Content: Materials shall not contain mercury or mercury compounds.
 - 5. The specified maximum volatile organic compounds (VOC) content shall apply to the unthinned product.
- C. Related Work Specified Elsewhere:
 - 1. SECTION 01300 – Submittals
 - 2. Division 3 – Concrete

1.02 APPLICABLE STANDARDS AND PUBLICATIONS:

- A. Standards or Codes: The edition of the publications of the organizations listed below in effect at the time of the advertisement for bids form a part of this specification to the extent referenced. See the various paragraphs for the specified standard. In the case of a conflict between the requirements of this SECTION and those of the listed document, the requirements of this SECTION shall prevail.
 - 1. American National Standards Institute (ANSI):
 - a. A13.1 - Scheme for the Identification of Piping Systems
 - b. Z535.1 - Safety Colors
 - 2. American Society for Testing and Materials (ASTM):
 - a. C267 - Standard Test Methods for Chemical Resistance of Mortars, Grouts, and Monolithic Surfacing and Polymer Concretes
 - b. D3960 - Standard Practice for Determining Volatile Organic Compound (VOC) Content of Paints and Related Coatings
 - c. D4258 - Standard Practice for Surface Cleaning Concrete for Coating
 - d. D4259 - Standard Practice for Abrading Concrete
 - e. D4260 - Standard Practice for Acid Etching Concrete
 - f. D4261 - Standard Practice for Surface Cleaning Concrete Unit Masonry for Coating
 - g. D5201 - Standard Practice for Calculating Formulation Physical Constants of Paints and Coatings
 - h. E84 - Standard Test Method for Surface Burning Characteristics of Building Materials
 - 3. Society for Protective Coatings (SSPC) Surface Preparation Specifications:

- a. SP1 - Solvent Cleaning: Removes oil, grease, soil, drawing and cutting compounds, and other soluble contaminants.
 - b. SP2 - Hand Tool Cleaning: Removes loose mill scale, loose rust, loose paint and other loose foreign matter.
 - c. SP3 - Power Tool Cleaning: Removes loose material. Not intended to remove all scale or rust.
 - d. SP5 - White Metal Blast Cleaning: Removes all scale, rust, foreign matter. Leaves surface gray-white uniform metallic color.
 - e. SP6 - Commercial Blast Cleaning: Two-thirds of each square inch free of all visible residues; remainder only light discoloration.
 - f. SP7 - Brush-Off Blast Cleaning: Removes only loose material, remaining surface tight and abraded to give anchor pattern.
 - g. SP10 - Near-White Blast Cleaning: At least 95% of each square inch shall be free of all visible residues.
 - h. SP11 - Power Tool Cleaning to Bare Metal
- 4. International Concrete Repair Institute (ICRI)
 - a. Guideline #03732: Surface preparation should comply with ICRI technical guideline number 03732 (selecting and specifying concrete surface preparation for sealers, coatings and polymer overlays).
 - 5. United States Army Corps of Engineers (USACE)
 - a. CRD-C 48 - Standard Test Method for Water Permeability of Concrete
 - b. CRD C163 Test Method for Water Permeability of Concrete Using Triaxial Cell

1.03 DEFINITIONS:

- A. Coating systems include surface preparation, prime coat (first coat), finish coats (second and third coats), inspection, cleaning, and touch-up of surfaces and equipment. Shop preparation, prime coat, and finish coats to be shop-applied may be specified elsewhere or referenced to this SECTION so that a complete system is specified and coordinated.
 - 1. Where surface preparation and first (prime) coat are specified in other SECTIONS to be shop-applied, such as for structural steel, hollow metal doors or equipment, only the touch-up and finish coats are a part of field painting. Surface preparation is the required degree of preparation prior to application of first (prime) coat regardless if done in shop or field.
 - 2. If materials are provided without shop primer such as miscellaneous steel or sheet metal, then surface preparation, first, second, and third coats are a part of field painting.
 - 3. Concealed surfaces are generally not required to have finish-coats unless otherwise specified, but prime coat should be applied and touched up prior to concealment.
 - 4. Where equipment and materials are provided with shop-applied finished coating system, only touch-up is a part of field painting.
 - 5. Refer to applicable SECTIONS to determine whether surface preparation and first coat, or complete coating system, is to be shop-applied.
 - 6. The term "DFT" means minimum dry film thickness, with no tolerance for thinner films.

1.04 SUBMITTALS:

- A. Submit as specified in SECTION 01300.
- B. Submittals include, but are not limited to, the following:
 - 1. Schedule of products and paint systems to be used. Schedule shall include the following information:
 - a. Surfaces for system to be applied

- b. Surface preparation method and degree of cleanliness
 - c. Product MANUFACTURER, name, and number
 - d. Method of application
 - e. Dry film thickness per coat of coating to be applied
2. Color charts for selection and acceptance
 3. Product information
 - a. MANUFACTURER's data sheet for each product proposed
 - b. Technical and performance information that demonstrates compliance with the system performance and material requirements
 - c. MANUFACTURER's instructions and recommendations on surface preparation and application
 - d. Compatibility of shop and field applied coatings (where applicable)
 - e. Material Safety Data Sheet (MSDS) filled out completely according to the Florida Right-to-Know Law, Chapter 442, Florida Statutes, clearly identifying each product used.
 4. Certification signed by coating MANUFACTURERS stating that each coating is suitable for service intended as stated on each coating system sheet, and that the materials to be installed comply in all respects with the requirements of this SECTION.
 5. The CONTRACTOR shall certify in writing to the CITY that applicators have previously applied all the systems in this SECTION and have the ability and equipment to prepare the surfaces and apply the coatings correctly.
 6. Samples
 - a. Painted Wood: Eight (8) inch square samples for each color and material on hardboard.
 - b. Sample of each paint, finish, and other coating material on 8-1/2 inch by 11-inch sheet metal. Each sheet shall be completely coated over its entire surface with one coating material, type, or color.
 - c. Two (2) sets of color samples that match each color selected by the CITY from the MANUFACTURER's color charts. The color designation shall be shown on the back of the color sample.
 - d. Two (2) 2-foot by 2-foot concrete panels shall be constructed at the Site in an area designated by the CITY. On one panel, the CONTRACTOR shall apply the coating system required for water-retaining concrete interior surfaces and the system for concrete exterior surfaces on the other panel. The CONTRACTOR shall not begin coating the structure surfaces until the CITY has accepted both panels. If the CITY does not approve either panel, at its own expense the CONTRACTOR shall erect another, coat it, and request CITY approval.

1.05 QUALITY ASSURANCE:

- A. Applicator Qualifications:
 1. Coating WORK shall be performed by an SSPC certified CONTRACTOR having a minimum of Category QP 1 certification for WORK without hazardous paint removal, and Category QP 2 certification for WORK involving hazardous paint removal. The certified CONTRACTOR shall maintain in effect all required certifications for the duration of the Project. Any request for Project delay due to an expired certification will not be considered.
 2. The applicator shall be certified in application of specified products and systems on projects of similar size and scope, as demonstrated by previous successful installations, and shall be approved by the MANUFACTURER in writing.

3. Successful completion of a minimum of five (5) major pump stations projects of similar size and complexity to specified WORK.
- B. Manufacturer:
1. Provide products of MANUFACTURER with no less than ten (10) years experience in manufacturing the materials for the required WORK.

1.06 RESPONSIBILITIES: (Not Used)

1.07 INSPECTION COORDINATION:

- A. Pre-painting Conference:
1. Before field painting starts, representatives for the CITY, CONTRACTOR, coating applicator, and coating MANUFACTURER's technical representative shall meet with the CITY's personnel.
 2. Agenda for the meeting will include details of surface preparations and coating systems to ensure understanding and agreement by all parties for compliance.
- B. In the event a problem occurs with coating system, surface preparation, or application, coating applicator and coating MANUFACTURER's technical representative shall promptly investigate the problem and submit results to the CITY.
- C. Whenever water tightness in a water-retaining structure is dependent upon WORK in other sections, the CONTRACTOR shall assume full responsibility for water tightness of the integrated assembly. Prior to starting WORK, CONTRACTOR shall meet with installers involved and with MANUFACTURERS of all materials involved to review Drawings and Specifications to insure that materials are being used properly and details are correct. A written report of this meeting shall be submitted to the CITY. The report shall contain at least:
1. Meeting date and names and affiliations of those present and written statements from each installer and MANUFACTURER of their acceptance of Drawings, Specifications and conditions, and of proposed use of their materials as proper for purposes shown.

1.08 WARRANTY:

- A. The MANUFACTURER shall warrant the EQUIPMENT, MATERIALS, and PRODUCTS specified in this SECTION against defective materials and workmanship with the MANUFACTURER's extended warranty, for no less than five (5) years. The extended warranty period will start after the CONTRACTOR's one (1) year warranty expires; and as described in Article 13 of Section 00700 - General Terms and Conditions. The MANUFACTURER shall provide a special MANUFACTURER's extended warranty for the stipulated period, or a Warranty Bond, to extend the MANUFACTURER's warranty period for the stipulated period.
- B. The CONTRACTOR shall warranty the WORK against defects for one (1) year from the date of Substantial Completion and as described in Article 13 of Section 00700 - General Terms and Conditions.

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS:

- A. Proprietary names and product numbers are specified in most systems for material identification from these MANUFACTURERS.
1. PPG (Pittsburg Plate Glass Co.)
 2. Carboline Company, Inc.
 3. BASF Building Systems
 4. ICI Devoe Coating Company
 5. The Euclid Chemical Company
 6. Tnemec Company, Inc.

7. Xypex Chemical, Ltd.
8. Kryton International
9. Sika Corporation
10. GML Coatings, LLC
11. Wasser Corporation
12. Xymax Coatings, Inc.
13. Benjamin Moore & Company
14. Sherwin-Williams
15. PPC Coatings
16. International Fire-Resistant Systems, Inc.
17. Penetron
18. Belzona Inc.
19. Alocit & Enviropeel USA.

2.02 GENERAL:

- A. Materials furnished for each coating system must be compatible with the substrate.
- B. Single Manufacturer: All materials in each coating system shall be by the same coating MANUFACTURER to assure compatibility of coatings.
- C. Compatibility: When shop-painted surfaces are to be field coated, the CONTRACTOR shall ascertain whether finish materials will be compatible with shop coating. Coatings of uncertain composition shall be removed completely before applying new coatings.
- D. Colors:
 1. Color of finish coatings shall match accepted color samples.
 2. When second and finish coats of a system are of same type, CONTRACTOR shall tint or use an easy distinguishable alternate color on second coat to enable visual coverage inspection of the third coat. When first and second coats only are specified and are of same or different types, tint or use an easy distinguishable alternate color on first coat to enable visual coverage inspection of the second coat.
- E. Include on label of material containers:
 1. MANUFACTURER's name, product name, and number
 2. Type of paint and generic name
 3. Color name and number
 4. Storage and temperature limits
 5. Mixing and application instructions, including requirements for precautions which must be taken
 6. Drying, recoat, or curing time

2.03 COATING SYSTEMS: Specified on the "Coating System" sheets at the end of this SECTION.

2.04 SURFACES TO BE COATED:

<u>Generic Description</u>	<u>Specific Surfaces</u>	<u>System</u>
Steel, mild exposure, non-immersion, Interior	<ol style="list-style-type: none"> 1. Hollow metal doors and frames 2. Miscellaneous steel 	S-1
Steel, severe exposure, non-immersion, exterior or interior, where only marginal cleaning can be performed	<ol style="list-style-type: none"> 1. Miscellaneous exposed steel surfaces 	S-2

<u>Generic Description</u>	<u>Specific Surfaces</u>	<u>System</u>
Concrete and concrete masonry units (CMU), mild exposure, non-immersion, interior and exterior	1. Precast Concrete Control Structure 2. Miscellaneous concrete structural elements	C-1
Concrete and concrete masonry units, severe exposure, non-immersion, interior	1. Miscellaneous concrete structural elements	C-2
Existing water-retaining concrete structures, below water level; protection against acid producing bacteria and other elements	1. Intake & Discharge Bays	C-3
Water-retaining concrete structures (waterproofing) , non-immersion	1. Pump Stations	C-4

2.05 SURFACES NOT TO BE COATED:

- A. Factory finished equipment, except for touch-up or noted otherwise
- B. Metal surfaces of stainless steel, bronze, aluminum, and fiberglass
- C. Concrete, unless listed on specific surfaces above
- D. Machined surfaces
- E. Grease fittings
- F. Glass
- G. Equipment nameplates
- H. Platform gratings, stair treads, door thresholds, and other walking surfaces unless listed on specific surfaces above
- I. Concrete Floors unless listed above

PART 3 - EXECUTION

3.01 DELIVERY, STORAGE, AND HANDLING:

- A. Manufacturer Recommendations: Unless this specification requires otherwise, CONTRACTOR shall strictly follow the MANUFACTURER's printed recommendations and instructions for storing and handling coating system materials.
- B. Delivery of Materials:
 - 1. Deliver in sealed containers with labels and information legible and intact. Containers shall also have correct labels with required information.
 - 2. CONTRACTOR shall allow sufficient time for testing, if required.
- C. Storage of Materials: CONTRACTOR shall store under conditions recommended by the Material Safety Data Sheets:
 - 1. All protective coating materials shall be used within the MANUFACTURER's recommended shelf life.
 - 2. Store only acceptable materials on Project Site.
 - 3. Store tightly sealed materials off ground and away from moisture, direct sunlight, extreme heat, and freezing temperatures. Provide separate area and suitable containers for storage of coatings and related coating equipment.
 - 4. Dispose of used or leftover containers, thinners, rags, brushes, and rollers in accordance with applicable regulations.

3.02 PREPARATION FOR COATING:

- A. General: All surfaces to receive protective coatings shall be clean prior to application of coatings. The CONTRACTOR shall examine all surfaces to be coated, and shall correct all surface defects before application of any coating material. All marred or abraded spots on shop-primed and on factory-finished surfaces shall receive touch-up restoration prior to any coating application. Surfaces to be coated shall be dry and free of visible dust.
- B. Protection of surfaces not to be coated: Surfaces that are not to receive protective coatings shall be protected during surface preparation, cleaning, and coating operations.
- C. Hardware, lighting fixtures, switch plates, machined surfaces, couplings, shafts, bearings, nameplates on machinery, and other surfaces not to be painted shall be removed, masked, or otherwise protected. Drop cloths shall be provided to prevent coating materials from falling on or marring adjacent surfaces. The working parts of mechanical and electrical equipment shall be protected from damage during surface preparation and coating operations. Openings in motors shall be masked to prevent entry of coating or other materials.
- D. Care shall be exercised not to damage adjacent work during blast cleaning operations. Spray painting shall be conducted under carefully controlled conditions. The CONTRACTOR shall be fully responsible for and shall promptly repair any and all damage to adjacent work or adjoining property occurring from blast cleaning or coating operations.
- E. Protection of painted surfaces: Cleaning and coating shall be coordinated so that dust and other contaminants from the cleaning process will not fall on wet, newly coated surfaces.

3.03 SURFACE PREPARATION:

- A. General
 - 1. Prepare surfaces for each coating system conforming to SSPC or ASTM surface preparation specifications listed.
 - a. If grease or oils are present, SSPC-SP1 must precede any other method specified.
 - b. Remove surface irregularities such as weld spatter, burrs, or sharp edges, prior to specified surface preparation.
 - 2. Depth of profile shall be as specified for each system, but in no instance shall it exceed one-third of the total dry-film thickness of complete system.
 - 3. Prepare only those areas which will receive the first coat of the system on the same day.
- B. Metals
 - 1. The minimum abrasive blasting surface preparation shall be as indicated in the coating system sheets included at the end of this Section. Where there is a conflict between these specifications and the coating MANUFACTURER's printed recommendations for the intended service, the higher degree of cleaning shall apply.
 - 2. All sharp edges shall be rounded or chamfered, and all burrs, surface defects, and weld splatter shall be ground smooth prior to blast cleaning.
 - 3. The type and size of abrasive shall be selected to produce a surface profile that meets the system sheet requirements for the particular coating and service conditions. Abrasives for submerged and severe service coating systems shall be clean, hard, sharp cutting crushed slag. Automated blasting systems shall not be used for surfaces that will be in submerged service. Metal shot or grit shall not be used for surfaces that will be in submerged service, even if subsequent abrasive blasting is planned to be one with hard, sharp cutting crushed slag.
 - 4. Abrasive shall not be reused unless an automated blasting system is used for surfaces that will be in non-submerged service. For automated blasting systems, clean oil-free abrasives shall be maintained. The abrasive mix shall include at least 50 percent grit.

5. The CONTRACTOR shall comply with the applicable federal, state, and local air pollution control regulations for blast cleaning.
 6. Compressed air for air blast cleaning shall be supplied at adequate pressure from well maintained compressors equipped with oil and moisture separators that remove at least 95 percent of the contaminants.
 7. Surfaces shall be cleaned of all dust and residual particles of the cleaning operation by dry air blast cleaning, vacuuming, or another method prior to painting.
 8. Enclosed areas and other areas where dust settling is a problem shall be vacuum cleaned and wiped with a tack cloth.
 9. Damaged or defective coating shall be removed by the blast cleaning to meet the clean surface requirements before recoating.
 10. If the required abrasive blast cleaning will damage adjacent work, the area to be cleaned is less than 100 square feet, and the coated surface will not be submerged in service, then SSPC SP2 or SSPC SP3 may be used.
 11. Shop applied coatings of unknown composition shall be completely removed before the indicated coatings are applied. Valves, castings, ductile iron pipe, and fabricated pipe or equipment shall be examined for the presence of shop-applied temporary coatings. Temporary coatings shall be completely removed by solvent cleaning per SSPC SP1 before the abrasive blast cleaning work is started.
 12. Shop primed equipment shall be solvent cleaned in the field before finish coats are applied.
- C. Concrete and Concrete Masonry Units
1. Surface preparation shall not begin until at least 30 days after the concrete or masonry has been placed.
 2. All oil, grease, and form release and curing compounds shall be removed by detergent cleaning per SSPC SP1 before abrasive blast cleaning.
 3. Concrete, concrete block masonry surfaces and deteriorated concrete surfaces to be coated shall be abrasive blast cleaned to remove existing coatings, laitance, deteriorated concrete, and to roughen the surface equivalent to the surface of the No. 80 grit flint sandpaper, if required by the coating application instructions.
 4. If acid etching is required by the coating application instructions, the treatment shall be made after abrasive blasting. After etching, CONTRACTOR shall rinse surfaces with water and test the pH. The pH shall be between neutral and eight (8).
 5. Surfaces shall be clean and as recommended by the coating MANUFACTURER before coating is started.
 6. Unless required for proper adhesion, surfaces shall be dry prior to coating. The presence of moisture shall be determined with a moisture detection device such as Delmhorst Model DB, or equal.

3.04 APPLICATION:

- A. CONTRACTOR shall apply coatings in accordance with coating MANUFACTURER's recommendations. Materials shall be thoroughly stirred, strained, and kept at uniform consistency during application. Coatings from different MANUFACTURERS shall not be mixed together.
- B. Use properly designed brushes, rollers, and spray equipment for all applications.
- C. On unprimed surfaces apply first coat of the system the same day as surface preparation.
- D. Cleaned surfaces and all coats shall be inspected prior to each succeeding coat. The CONTRACTOR shall schedule such inspection with the CITY in advance.

- E. Blast cleaned ferrous metal surfaces shall be painted before any rusting or other deterioration of the surface occurs. Blast cleaning shall be limited to only those surfaces that can be coated in the same working day.
- F. Special attention shall be given to edges, angles, weld seams, flanges, nuts and bolts, and other places where insufficient film thicknesses are likely to be present. Use stripe painting for these areas.
- G. Dry-film thickness of each system shall be at least as thick as the minimum specified. Maximum dry-film thickness shall not exceed the minimum more than 20% or coating MANUFACTURER's requirements, whichever is less. Where a dry-film thickness range is specified, the thickness shall not be outside the range.
- H. Shop and field painting shall not be applied within three (3) inches of unprepared surface of any substrate such as areas to be welded or bolted.
- I. Environmental Conditions:
 - 1. Atmospheric temperature must be 50 degrees Fahrenheit or higher during application, unless approved in writing by coating MANUFACTURER. Do not apply coatings when inclement weather or freezing temperature may occur during the curing time interval.
 - 2. Wind velocities for exterior applications shall be at a minimum to prevent overspray or fallout and not greater than coating MANUFACTURER's limits.
 - 3. Relative humidity must be less than 85% and the temperature of the surface to be painted must be at least five (5) degrees above the dew point.
 - 4. Provide adequate ventilation in all areas of application to ensure that at no time does the content of air exceed the Threshold Limit Value given on the MANUFACTURER's Material Safety Data Sheets for the specific coatings being applied.
- J. Recoat Time: In the event a coating, such as an epoxy, has exceeded its recoat time limit, prepare the previously applied coating in accordance with MANUFACTURER's recommendations.
- K. Protection:
 - 1. Cover or otherwise protect surfaces not to be painted. Remove protective materials when appropriate.
 - 2. Mask, remove, or otherwise protect finish hardware, machined surfaces, grilles, lighting fixtures, and prefinished units as necessary.
 - 3. Provide cover or shields to prevent surface preparation media and coatings from entering orifices in electrical or mechanical equipment. Where ventilation systems must be kept in operation at time of surface preparation, take precautions to shield intakes and exhausts to prevent the materials from entering system or being dispersed.
 - 4. Provide signs to indicate fresh paint areas.
 - 5. Provide daily cleanup of both storage and working areas and removal of all paint refuse, trash, rags, and thinners. Dispose of leftover containers, thinners, rags, brushes, and rollers that cannot be reused in accordance with applicable regulations.
 - 6. Do not remove or paint over equipment data plates, code stamps on piping, or UL fire-rating labels.

3.05 INSPECTION:

- A. CONTRACTOR shall provide and use a wet-film gauge to check each application approximately every fifteen (15) minutes in order to immediately correct film thickness under or over that specified.
- B. On ferrous surfaces, measurements shall be made with one of the thickness gauges listed below. The gauge shall be calibrated on metal practically identical in composition and

surface preparation to that being coated and be of substantially the same thickness, except that for measurements on metal thicker than 1/4 inch, the instrument may be calibrated on metal with a minimum thickness of 1/4 inch. When calibrating any of the gauges for making film measurements of over three (3) mils, the calibrating thickness standards (shims) shall be of non-metallic composition. Where only one thickness criterion is specified, the calibrating shim thickness shall closely approximate the specified thickness, but where both thicknesses are specified, the shim's thickness shall closely approximate an average of the two. Calibrating instructions, thickness standards and, in the case of the Mikrotest gauge, a calibrating tool, should be obtained from the MANUFACTURER or supplier of the gauge. Authorized thickness gauges are:

1. General Electric, Type B, General Electric Company
 2. Mikrotest, Elektrophysik - Koln
 3. Elcometer, Elcometer Instruments, Ltd.
 4. Inspector Gage, Elcometer Instruments, Ltd.
 5. Minitector, Elcometer Instruments, Ltd.
- C. Use holiday or pinhole detector on systems over metal substrates to detect and correct voids when indicated on system sheet.
- D. Furnish a sling psychrometer and perform periodic checks on both relative humidity and temperature limits.
- E. Check temperature of the substrate at regular intervals to be certain surface is five (5) degrees Fahrenheit or more above the dew point.

3.06 CLEANING AND REPAIRS:

- A. Remove spilled, dripped, or splattered paint from surfaces.
- B. Touch up and restore damaged finishes to original condition. This includes surface preparation and application of coatings specified.

END OF SECTION

<p style="text-align: center;">City of Fort Lauderdale</p>	<p>PROTECTIVE COATING SYSTEM</p>	
	<p>System S-1</p>	
<p><u>SERVICE:</u> Steel, Mild Exposure, Non-Immersion, Interior</p> <p>Surface Preparation: Field: SSPC-SP1 and SP6. Clean and dry.</p> <p>First Coat: High solids polyamine or polyamide epoxy with minimum 67% solids by volume. Spray Applications; apply at 5.0 - 8.0 mils DFT. Brush applications, apply at 4.0 mils DFT.</p> <p>Second Coat: Same as first coat.</p> <p>Note: Second coat required only for brush applications.</p> <p>Third Coat (Exterior): Not required.</p> <p>System Total: Minimum 8.0 mils dry film thickness.</p> <p>Volatile Organic Content: Maximum 3.5 lbs/gal (425 g/l).</p>		
<p>COATING MANUFACTURER</p>	<p>PRODUCT DESIGNATION</p>	
<p>PPGCarboline ICI Devoe Tnemec Sherwin-Williams</p>	<p>FIRST COAT Amerlock 2/400 Carboguard 890 Devran 224HS Hi-Build Epoxoline II N69 Macropoxy 646 FC(5-8mils DFT)</p>	<p>SECOND COAT Same as first coat Same as first coat Same as first coat Same as first coat Same as first coat</p>

City of Fort Lauderdale	PROTECTIVE COATING SYSTEM
	System S-2

<u>SERVICE:</u>	Steel, Severe Exposure, Non-Immersion, Exterior or Interior, where only marginal cleaning can be performed
Surface Preparation:	Field: SSPC-SP1 and SP3. Clean and dry.
First (prime) Coat:	Polyamidoamine epoxy with wetting and penetrating properties and with 98% solids by volume. Apply at 1.5 to 2.0 mils dry film thickness.
Second Coat:	High build polyamide epoxy with minimum 65% solids by volume. Apply at 5.0 mils dry film thickness.
Third Coat (Exterior):	High solids aliphatic or acrylic polyurethane gloss enamel with minimum 65% solids by volume. Apply at 2.0 mils dry film thickness.
System Total:	Minimum 8.5 mils dry film thickness, Exterior. Minimum 6.5 mils dry film thickness, Interior.
Volatile Organic Content:	Maximum 2.8 lbs/gal (340 g/l).

COATING MANUFACTURER	PRODUCT DESIGNATION		
	FIRST COAT	SECOND COAT	THIRD COAT
Carboline	Carboguard 890	Same as first coat	Carboline 133HB
ICI Devoe	Bar-Rust 231	Devran 224HS	Devthane 379H
Tnemec	Chembuild 135	Not Applicable	Endura-Shield 1074
PPG	Amerlock 2/400 or Sealer	Amerlock 2/400	Amercoat 450H
Sherwin-Williams	Macropoxy 646 FC Polyurethane	Same as first coat	Acrolon 218 HS

City of Fort Lauderdale	PROTECTIVE COATING SYSTEM
	System C-1

<u>SERVICE:</u>	Concrete walls (interior), CMU walls (interior & exterior), and precast walls with a finned or textured concrete surface (exterior), Mild Exposure, Non-Immersion,
Surface Preparation:	Concrete: ASTM D 4258, clean and dry, free from grease, oil, and any other contamination. Remove protrusions. Fill pits in concrete with patching compound as recommended by coating MANUFACTURER. CMU: ASTM D 4261, clean and dry, free from grease, oil, and any other contamination. Remove protrusions.
First Coat:	Acrylic Latex block filler with minimum 44% solids by volume. Apply at approximately 800 square feet per gallon on concrete and as required to fill pores on CMU.
Second Coat:	Water reducible acrylic coating with minimum 34% solids by volume, gloss finish. Apply at 2.0 mils dry film thickness.
Third Coat:	Same as second coat.
System Total:	Minimum 4.0 mils dry film thickness in addition to filler.
Volatile Organic Content:	Maximum 2.8 lbs/gal (340 g/l).

COATING MANUFACTURER	PRODUCT DESIGNATION		
	FIRST COAT	SECOND COAT	THIRD COAT
PPG			
Carboline	PermaCrete 4-100	PittTech	PittTech
ICI Devoe	Carbocrylic 650/120	Carbocrylic 3359	Same as second coat
Tnemec	Bloxfil 4000	Devflex 4208	Same as second coat
Sika Corporation	Envirofill 130	Tneme-Cryl 6	Same as second coat
Sherwin-Williams	Sikagard 62	Sikagard 62	Same as second coat
	CementPlex 875	DTM Primer Finish	Same as second coat

City of Fort Lauderdale	PROTECTIVE COATING SYSTEM
	System C-2

<u>SERVICE:</u>	Concrete and Concrete Masonry Units, Severe Exposure, Non-Immersion, Interior
Surface Preparation:	Concrete: ASTM D4258, clean and dry, free from grease, oil, and any other contamination. Remove protrusions. Fill pits in concrete with patching compound as recommended by coating MANUFACTURER. CMU: ASTM D 4261, clean and dry, free from grease, oil, and any other contamination. Remove protrusions.
First Coat:	Sealer and primer as recommended by manufacturer
Second Coat:	Concrete: High solids epoxy with minimum 75% solids by volume. Apply at 5.0 to 8.0 mils dry film thickness. CMU: High solids epoxy block filler with minimum 60% solids by volume. Apply at 10.0 to 20.0 mils dry film thickness and as required to fill pores.
Third Coat:	Concrete & CMU: High solids epoxy with minimum 75% solids by volume. Apply at 5.0 to 8.0 mils dry film thickness. Semi-gloss or gloss finish.
System Total:	Concrete: Minimum 10.0 mils dry film thickness. CMU: Minimum 15.0 mils dry film thickness.
Volatile Organic Content:	Maximum 3.5 lbs/gal (425 g/l).

COATING MANUFACTURER	PRODUCT DESIGNATION		
	FIRST COAT	SECOND COAT	THIRD COAT
PPG	See * note below	Amerlock 2/400	same as second coat
Carboline	Carboguard 1340	Carboguard 890	Carboguard 890 or
ICI Devoe	891		
Tnemec	Pre-Prime 167	Devran 224 HS	Devran 224 HS
Sika Corporation	H.S Epoxy 104	HS Epoxy 104	H.S. Epoxy 104
Wasser Coatings	Sikagard 62	Sikagard 62	Same as second coat
Sherwin-Williams	MC-CR 100^	MC-CR	MC-Luster (semi-gloss)
	Corobond 100**	Macropoxy HS Epoxy (80%) Kem Cati Coat Epoxy Block Filler-CMU	Same as second coat
	Notes:		
	*Use Amerlock Sealer for concrete, and Permacrete 4-100 for masonry units		
	**Epoxy Primer		
	^ thinned 20%		

<p style="text-align: center;">City of Fort Lauderdale</p>	<p>PROTECTIVE COATING SYSTEM</p>	
	<p>System C-3</p>	
<p><u>SERVICE:</u> Existing water-Retaining Concrete Structures, below water level-protection against acid producing bacteria and other elements.</p> <p>Surface Preparation: Per MANUFACTURER recommendations</p> <p>First Layer: Two coats of cementitious crystalline coating containing catalytic chemicals which migrate into the concrete using moisture present in the concrete as the migrating medium, and which cause the moisture and the unhydrated cement in the concrete to react causing the growth of nonsoluble crystals, thereby rendering the concrete itself waterproof. The concrete becomes permanently sealed against the penetration of liquids from any direction.</p> <p>Second Layer: Not Required</p> <p>Third Coat: Not required</p> <p>System Total Thickness: As MANUFACTURER recommends</p> <p>Crystallizing capability of waterproofing material shall be evidenced by independent SEM (Scanning Electron Microscope) photographs documenting penetration of crystal-forming waterproofing material to a depth of 2 inches.</p> <p>Independent testing shall be performed for 1. Permeability in accordance with USACE CRD C48/ USACE CRD C163 to a pressure of 200 psi with no measurable leakage exhibited and 2. Chemical resistance in accordance to ASTM C267.</p>		
<p>COATING MANUFACTURER</p>	<p>PRODUCT DESIGNATION</p>	
<p>Xypex Chemical, Ltd BASF Building Systems Kryton International</p>	<p>FIRST COAT Concentrate Tegraproof Krystol T1</p>	<p>SECOND COAT Modified same as first coat Krystol T2</p>

City of Fort Lauderdale	PROTECTIVE COATING SYSTEM
	System C-4

SERVICE:	Water -Retaining Concrete Structures (waterproofing), Non-immersion
Surface Preparation:	ASTM D4258, clean and dry, free from grease, oil, and any other contamination. Remove protrusions. Per MANUFACTURER recommendations. For Concrete surfaces that have imperfections (i.e., voids, cracks and pores), use breathable high-build, waterproof cement-based coating. Bonding agent shall be mixed with the coating to improve adhesion to substrate. For concrete surfaces that are perfect, breathable, water based, acrylic emulsion coating that will resist ultraviolet light, alkali, acid and mildew.
Primer Coat:	Apply at 4 mils dry film thickness.
First Coat:	Apply at 25 mils dry film thickness.
Second Coat:	Apply at 15 mils dry film thickness.
Third Coat:	N/A
System Total:	Minimum 44 mils dry film thickness.
Volatile Organic Content:	None

<u>COATING MANUFACTURER</u>	<u>PRODUCT DESIGNATION</u>		
	FIRST COAT	SECOND COAT	THIRD COAT
Concrete surfaces with imperfections Thoro Endur-O-Seal Ultra System Products	ThoroSeal Thotocoat 200 EP Enduro-Seal 100 USP - 100 Ultra Seal	ThoroSeal Thotocoat 200 EP Enduro-Seal 100 USP - 100 Ultra Seal	
Concrete surfaces without imperfections Thoro	ThoroSeal 200 or equal	ThoroSeal 200 or equal	

DRAWING INDEX

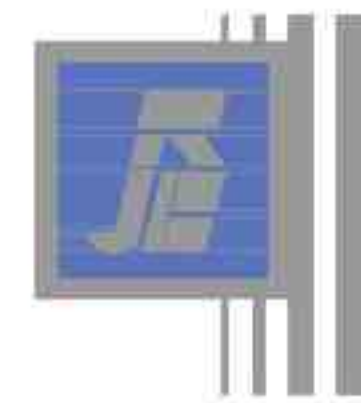
DRAWINGS

SHT. NO.	SHEET DRAWINGS
1	COVER
2	GENERAL NOTES
3	LOWER LEVEL – PLAN VIEW
4	INTERMEDIATE LEVEL – PLAN VIEW
5	UPPER LEVEL – PLAN VIEW
6	CONCRETE REPAIR – TYPE I
7	CONCRETE REPAIR – TYPE I
8	CONCRETE REPAIR – TYPE II
9	CONCRETE REPAIR – TYPE II
10	CONCRETE REPAIR – TYPE III

CITY OF FORT LAUDERDALE



PROJECT ID#: P12170
 GTL WWTP PRE-TREATMENT BUILDING
 REPAIR ASSESSMENT
 1801 EISENHOWER BLVD,
 FORT LAUDERDALE, FLORIDA 33316



R.J. Behar & Company, Inc.
 Engineers • Planners

6861 S.W. 196th Avenue, Suite 302
 Pembroke Pines, Florida · 33332
 (954) 680-7771 · Fax: (954) 680-7781

Nestor Santana
 Digitally signed by Nestor Santana
 Date: 2024.07.11 15:14:32 -04'00'

THIS DOCUMENT HAS BEEN DIGITALLY SIGNED AND SEALED BY:



THE ABOVE NAMED PROFESSIONAL ENGINEER SHALL BE RESPONSIBLE FOR THE FOLLOWING SHEETS IN ACCORDANCE WITH RULE 61G15-23004, F.A.C.
 SHEETS: 1 THROUGH 10
 PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED. THE SIGNATURE MUST BE VERIFIED IN THE ELECTRONIC DOCUMENTS.



LOCATION SKETCH (SCALE: N.T.S.)

PROJECT ID: P12170
 GTL WWTP PRE-TREATMENT BUILDING
 REPAIR ASSESSMENT
 1801 EISENHOWER BLVD, FORT LAUDERDALE FL 33316

 CITY OF FORT LAUDERDALE
 PUBLIC WORKS DEPARTMENT
 ENGINEERING & ARCHITECTURE
 100 North Andrews Avenue, Fort Lauderdale, Florida 33301

FORT LAUDERDALE CITY COMMISSION

DEAN J. TRANTALIS	MAYOR
PAMELA BEASLEY-PITTMAN	VICE MAYOR/COMMISSIONER
	DISTRICT III
JOHN C. HERBST	COMMISSIONER – DISTRICT I
STEVEN GLASSMAN	COMMISSIONER – DISTRICT II
WARREN STURMAN	COMMISSIONER – DISTRICT III

ENGINEER OF RECORD
 NESTOR SANTANA, P.E.
 LICENSE NO.: 85785

DATE: 02/02/2024
 CAD FILE: P12170-1-C0VR.dwg
 SHEET NAME: COVER
 R.J. BEHAR PROJECT No.: 22055

FINAL SUBMITTAL

GENERAL

- GENERAL DESIGN AND CONSTRUCTION SHALL BE IN COMPLIANCE WITH THE FLORIDA BUILDING CODE 2022 EDITION AND THE REQUIREMENTS SET FORTH BY THE BUILDING OFFICIALS HAVING JURISDICTION OVER THIS PROJECT.
- THE CONTRACTOR SHALL COORDINATE ALL WORK REQUIRED BY THE STRUCTURAL DRAWINGS AND PROJECT SPECIFICATIONS WITH THE EXISTING MECHANICAL & ELECTRICAL COMPONENTS, AND PROJECT SPECIFICATIONS, AND THE CODES AND STANDARDS CITED HEREIN.
- THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND SITE CONDITIONS AND NOTIFY THE CITY OF FORT LAUDERDALE OF ANY DISCREPANCIES PRIOR TO PROCEEDING WITH THE WORK.
- 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 SHALL NOT DISTURB AREAS OUTSIDE LIMITS OF THE PROJECT.
- IN GENERAL, EXISTING STRUCTURES AND UTILITIES ARE NOTED AS EXISTING AND/OR SHOWN IN THIN/DASH LINES. NEW CONSTRUCTION IS IN HEAVY LINES AND/OR UNDERLINED.
- ALL WORK WITHIN CITY OF FORT LAUDERDALE RIGHT-OF-WAYS SHALL BE IN CONFORMANCE WITH THE CITY MINIMUM STANDARDS AND/OR REQUIREMENTS.
- 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.

CONCRETE SPALL REPAIRS:

- THE ENTIRE PROJECT SHALL BE SURVEYED AND MARKED BY THE CONTRACTOR AND OWNER REPRESENTATIVE AND SHALL SUBMIT THE SURVEY AND MARKING RESULTS, INCLUDING PROJECTED QUANTITIES, TO THE ENGINEER PRIOR TO THE START OF THE CONCRETE REPAIR WORK.
- REMOVAL OF CONCRETE DOWN TO SOUND CONCRETE SHALL BE ACCOMPLISHED USING METHODS THAT DO NOT DAMAGE THE SOUND PORTION OF THE STRUCTURE THAT IS TO REMAIN.
- IN ADDITION TO DAMAGED CONCRETE, ALL CONCRETE ADJACENT TO CORRODED REINFORCING STEEL SHALL BE REMOVED UNTIL A MINIMUM OF TWO (2) INCHES AND A MAXIMUM OF FOUR (4) INCHES OF NON-CORRODED REINFORCING STEEL IS UNDERCUT AND EXPOSED ALONG THE LENGTH OF THE BAR IN EACH DIRECTION. THIS TO BE DONE ONLY AFTER APPROVAL BY THE ENGINEER WHO AT HIS DISCRETION CAN ALLOW FOR SOME DEGREE OF CORROSION TO REMAIN AND SHALL STOP THE CONCRETE REMOVAL IN ORDER TO KEEP THE CONCRETE REPAIR QUANTITIES WITHIN THE SCOPE OF WORK.
- IN ALL CASES WHERE REINFORCING STEEL IS EXPOSED, CONCRETE SHALL BE REMOVED TO PROVIDE A MINIMUM OF 1" INCH CLEARANCE AROUND THE CIRCUMFERENCE OF THE BARS WHICH WILL PERMIT UNIFORM SURFACE PREPARATION OF THE BARS AND ADEQUATE CONCRETE BOND TO THE BAR SURFACE.
- ALL DEFICIENCIES SHALL BE RESTORED SUCH THAT THERE IS A UNIFORM TRANSITION FROM RESTORED SURFACES TO ADJACENT UNRESTORED SURFACES.
- ALL REPAIRS TYPES WILL INCLUDE CONCRETE FINISH TYPE II AS PER SPECIFICATION 03350 AND PROTECTIVE COATING AS PER SPECIFICATION 09900 AND ALL INCIDENTAL FOR A COMPLETE REPAIR AND RESTORATION OF THE CONCRETE AREA.

CONCRETE SPALL REPAIR SURFACE PREPARATION

- HEAVY OXIDES, SCALE, OR OTHER BOND-INHIBITING MATERIALS SHALL BE REMOVED FROM THE ENTIRE CIRCUMFERENCE OF EXPOSED REINFORCING STEEL BY USING A HAND HELD GRINDER OR BRUSH TO THE SATISFACTION OF THE ENGINEER PRIOR TO THE PLACEMENT OF PORTLAND CEMENT GROUT.
- PRELIMINARY CLEANING: CONCRETE SURFACES SHALL BE THOROUGHLY CLEANED OF ALL DIRT, GREASE, OIL, SHELL CHIPS OF PARTIALLY LOOSENED CONCRETE, OR OTHER FOREIGN MATTER BY USING A HAND HELD GRINDER OR BRUSH TO THE SATISFACTION OF THE ENGINEER PRIOR TO THE PLACEMENT OF CONCRETE.
- FINAL CLEANING: AFTER THE ABOVE SURFACE PREPARATION STEPS HAVE BEEN COMPLETED, AND IMMEDIATELY PRIOR TO REPAIR, ALL AREAS CLEANED SHALL BE WASHED WITH FRESH WATER AND AIR BLASTED, OR BLASTED WITH A STIFF NOSE STREAM OF FRESH WATER UNTIL ALL LOOSENED MATERIALS AND SALT WATER SPRAY ARE REMOVED. THE CONCRETE SUBSTRATE SHALL BE FREE OF STANDING WATER PRIOR TO THE REPAIR.
- AREAS THAT HAVE UNDERGONE FINAL CLEANING SHALL BE REPAIRED THE SAME DAY THE FINAL CLEANING OPERATIONS ARE COMPLETED. IF NOT REPAIRED THE SAME DAY, THE FINAL CLEANING OPERATION SHALL BE REPEATED IMMEDIATELY PRIOR TO THE REPAIR TAKING PLACE.

SHORING

- PRIOR TO START OF REPAIR WORK, INSTALL TEMPORARY SHORING AROUND ANY STRUCTURAL ELEMENT REQUIRING A REPAIR PROCEDURE TYPE II OR TYPE III.
- PROVIDE SHOP DRAWINGS AND CALCULATIONS SIGNED AND SEALED BY A FLORIDA REGISTERED PROFESSIONAL ENGINEER.
- SHORING SHALL BE ABLE TO SUPPORT FULL LOAD OF ANY COLUMN OR STRUCTURAL ELEMENT TO BE REPAIRED.

REPAIR PROCEDURES

TYPE I CONCRETE REPAIR

NOTES:

- TYPE I CONCRETE REPAIR ONLY APPLIES FOR SURFACE DETERIORATION WITHOUT EXPOSED REBAR.
- TYPICAL DETAIL APPLIES TO ALL SURFACES, INTERIOR OR EXTERIOR.
- MAXIMUM 15 LBS CHIPPING HAMMER MAY BE USED FOR CONCRETE REMOVAL.

PROCEDURE:

- REMOVE ALL CONTAMINANTS, OIL, GREASE, LAITANCE AND WEAK CONCRETE TO EXPOSE SUBSURFACE VOIDS AND TO PRODUCE A SOUND CONCRETE SUBSTRATE AND AN ADDITIONAL MECHANICAL BOND WITH ADEQUATE PROFILE AND SURFACE COARSE POROSITY OF 40 GRIT RESEMBLING ICR1 #4-6 COMPARATOR. SUITABLE SURFACE PREPARATION METHODS INCLUDE DRY ABRASIVE BLASTING, SHOT BLASTING, SANDBLASTING, OR WATER JETTING. DO NOT USE A METHOD OF SURFACE PREPARATION THAT WILL FRACTURE THE CONCRETE.
- AREAS REQUIRING REPAIR SHOULD BE MODIFIED TO PROVIDE SIMPLE LAYOUTS AND TO PREVENT FEATHER EDGED CONDITIONS. GEOMETRY OF BOUNDARIES SHOULD MINIMIZE EDGE LENGTH.
- REPAIR CONCRETE WITH SIKAGUICK 1000 PLUS SIKALATEX R AS MANUFACTURED BY SIKA CORPORATION, LYNDHURST, NJ, OR EQUAL. INSTALL PER MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS.
- APPLY SPECIFIED COATING ON CLEAN AND DRY OR DAMPED CONCRETE SURFACE ONLY. MATERIALS SHALL BE MIXED, APPLIED AND CURED IN STRICT ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

TYPE II CONCRETE REPAIR

NOTES:

- TYPE II CONCRETE REPAIR ONLY APPLIES FOR SURFACE DETERIORATION & REINFORCEMENT STEEL W/ LESS THAN 20 % CROSS SECTIONAL LOSS.
- TYPICAL DETAIL APPLIES TO ALL SURFACES, INTERIOR OR EXTERIOR.
- ALL REBAR EXPOSED DURING THE CHIPPING OPERATION SHALL BE PROTECTED WITH SIKA ARMATEC 110 EPOCEM AS MANUFACTURED BY SIKA CORPORATION, LYNDHURST, NJ, OR EQUAL.
- MAXIMUM 15 LBS CHIPPING HAMMER MAY BE USED FOR CONCRETE REMOVAL.
- CONCRETE REMOVAL OF 3/4" MIN. CLEAR APPLIED TO CORRODED BARS ONLY & NON-CORRODED BARS WHEN DISTURBED.
- IN ADDITION TO DAMAGED CONCRETE, CONCRETE ADJACENT TO CORRODED REINFORCING STEEL SHALL BE REMOVED UNTIL A MINIMUM OF TWO (2) INCHES AND A MAXIMUM OF FOUR (4) INCHES OF NON-CORRODED REINFORCING STEEL IS UNDERCUT AND EXPOSED ALONG THE LENGTH OF THE BAR IN EACH DIRECTION. THIS TO BE DONE ONLY AFTER APPROVAL BY THE ENGINEER WHO AT HIS DISCRETION CAN ALLOW FOR SOME DEGREE OF CORROSION TO REMAIN AND SHALL STOP THE CONCRETE REMOVAL IN ORDER TO KEEP CONCRETE REPAIR QUANTITIES WITHIN THE SCOPE OF WORK.

PROCEDURE:

- REMOVE ALL CONTAMINANTS, OIL, GREASE, LAITANCE AND WEAK CONCRETE TO EXPOSE ANY LIGHTLY CORRODED REINFORCEMENT AND TO PRODUCE A SOUND CONCRETE SUBSTRATE. SUITABLE SURFACE PREPARATION METHODS INCLUDE DRY ABRASIVE BLASTING, WET ABRASIVE BLASTING, VACUUM ASSISTED ABRASIVE BLASTING, SHOT BLASTING, SANDBLASTING OR WATERJETTING.
- REMOVE CONCRETE A MINIMUM OF 1/2" CLEAR FOR SLABS AND 3/4" CLEAR FOR ANY OTHER CONCRETE ELEMENTS UNDER CORRODED BAR USING HAND HELD PNEUMATIC BREAKERS. IF NON-CORRODED BARS ARE EXPOSED AND DISTURBED BY THE REMOVAL PROCESS THEN THE BAR SHALL BE FULLY EXPOSED AS IF IT WERE FOUND TO BE CORRODED.
- AREAS REQUIRING REPAIR SHOULD BE MODIFIED TO PROVIDE SIMPLE LAYOUTS AND TO PREVENT FEATHER EDGE CONDITIONS. GEOMETRY OF BOUNDARIES SHOULD MINIMIZE EDGE LENGTH. PERIMETER OF REPAIR AREA CAN BE CUT BY SAW OR OTHER METHODS APPROXIMATELY 90 DEGREE ANGLE TO SURFACE AND LESS THAN 1/2" DEEP FOR VERTICAL ELEMENTS. DO NOT CUT OR DISTURB EXISTING REINFORCEMENT.
- HEAVY OXIDES, DUST, DEBRIS OR OTHER INHIBITING MATERIALS MUST BE REMOVED FROM EXPOSED REINFORCEMENT AND CONCRETE USING ANY OF THE ACCEPTED SURFACE PREPARATION METHODS DESCRIBED IN POINT 1 PROVIDING ADDITIONAL MECHANICAL BOND PRIOR TO APPLICATION OF APPROVED REINFORCEMENT CORROSION INHIBITOR.
- REPAIR CONCRETE WITH SIKA GROUT 328 AS MANUFACTURED BY SIKA CORPORATION, LYNDHURST, NJ, OR EQUAL. INSTALL PER THE MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS, FOR APPLICATIONS GREATER THAN 1-1/2" IN THICKNESS. FOR APPLICATIONS LESS THAN 1-1/2" IN THICKNESS, REPAIR CONCRETE WITH SIKALATEX R AS MANUFACTURED BY SIKA CORPORATION, LYNDHURST, NJ, OR EQUAL. INSTALL PER MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS.
- APPLY APPROVED COATING ON A CLEAN AND DRY CONCRETE SURFACE ONLY. MATERIALS SHALL BE MIXED, APPLIED AND CURED IN STRICT ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

TYPE III CONCRETE REPAIR

NOTES:

- TYPE III CONCRETE REPAIR ONLY APPLIES FOR SURFACE DETERIORATION & REINFORCEMENT STEEL W/ MORE THAN 20 % CROSS SECTIONAL LOSS.
- TYPICAL DETAIL APPLIES TO ALL SURFACES, INTERIOR OR EXTERIOR.
- ALL REBAR EXPOSED DURING THE CHIPPING OPERATION SHALL BE PROTECTED WITH SIKA ARMATEC 10 AS MANUFACTURED BY SIKA CORPORATION, LYNDHURST, NJ, OR EQUAL.
- MAXIMUM 15 LBS CHIPPING HAMMER MAY BE USED FOR CONCRETE REMOVAL.
- CONCRETE REMOVAL OF 3/4" MIN. CLEAR APPLIED TO CORRODED BARS ONLY & NON-CORRODED BARS WHEN DISTURBED.
- IN ADDITION TO DAMAGED CONCRETE, CONCRETE ADJACENT TO CORRODED REINFORCING STEEL SHALL BE REMOVED UNTIL A MINIMUM OF TWO (2) INCHES AND A MAXIMUM OF FOUR (4) INCHES OF NON-CORRODED REINFORCING STEEL IS UNDERCUT AND EXPOSED ALONG THE LENGTH OF THE BAR IN EACH DIRECTION. THIS TO BE DONE ONLY AFTER APPROVAL BY THE ENGINEER WHO AT HIS DISCRETION CAN ALLOW FOR SOME DEGREE OF CORROSION TO REMAIN AND SHALL STOP THE CONCRETE REMOVAL IN ORDER TO KEEP CONCRETE REPAIR QUANTITIES WITHIN THE SCOPE OF WORK.

PROCEDURE:

- REMOVE ALL CONTAMINANTS, OIL, GREASE, LAITANCE AND WEAK CONCRETE TO EXPOSE ANY LIGHTLY CORRODED REINFORCEMENT AND TO PRODUCE A SOUND CONCRETE SUBSTRATE. SUITABLE SURFACE PREPARATION METHODS INCLUDE DRY ABRASIVE BLASTING, WET ABRASIVE BLASTING, VACUUM ASSISTED ABRASIVE BLASTING, SHOT BLASTING, SANDBLASTING OR WATERJETTING.
- REMOVE CONCRETE A MINIMUM OF 3/4" CLEAR UNDER CORRODED BAR USING HAND HELD PNEUMATIC BREAKERS. IF NON-CORRODED BARS ARE EXPOSED AND DISTURBED BY THE REMOVAL PROCESS THEN THE BAR SHALL BE FULLY EXPOSED AS IF IT WERE FOUND TO BE CORRODED.
- AREAS REQUIRING REPAIR SHOULD BE MODIFIED TO PROVIDE SIMPLE LAYOUTS AND TO PREVENT FEATHER EDGE CONDITIONS. GEOMETRY OF BOUNDARIES SHOULD MINIMIZE EDGE LENGTH. PERIMETER OF REPAIR AREA CAN BE CUT BY SAW OR OTHER METHODS APPROXIMATELY 90 DEGREE ANGLE TO SURFACE AND LESS THAN 1/2" DEEP FOR VERTICAL ELEMENTS. DO NOT CUT OR DISTURB EXISTING REINFORCEMENT.
- HEAVY OXIDES, DUST, DEBRIS OR OTHER INHIBITING MATERIALS MUST BE REMOVED FROM EXPOSED REINFORCEMENT AND CONCRETE USING ANY OF THE ACCEPTED SURFACE PREPARATION METHODS DESCRIBED IN POINT 1 PROVIDING ADDITIONAL MECHANICAL BOND PRIOR TO APPLICATION OF APPROVED REINFORCEMENT CORROSION INHIBITOR. APPLY SIKA ARMATEC 110 EPOCEM AS MANUFACTURED BY SIKA CORPORATION, LYNDHURST, NJ, OR EQUAL FOR BONDING PRIMER.
- PLACE SUPPLEMENTAL BAR COVERING PARALLEL TO THE AFFECTED AREA LENGTH OF THE EXISTING CORRODED BAR PLUS THE REQUIRED LAP SPLICE LENGTH AT EACH END. USE OF MECHANICAL SPLICE IS ACCEPTED AS APPROVED BY ENGINEER.
- REPAIR CONCRETE WITH SIKA GROUT 328 AS MANUFACTURED BY SIKA CORPORATION, LYNDHURST, NJ, OR EQUAL. INSTALL PER THE MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS.
- APPLY APPROVED COATING ON A CLEAN AND DRY OR DAMPED CONCRETE SURFACE ONLY. MATERIALS SHALL BE MIXED, APPLIED AND CURED IN STRICT ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- PROJECT INSPECTOR NEEDS TO CERTIFY THAT THE REPAIRS CONFORM TO PLANS AND SPECIFICATIONS.

SUMMARY OF QUANTITIES			
PAY ITEM	ITEM	UNIT	QTY
1	MOBILIZATION	LS	1
2	DEMOLITION	SF	855
3	TYPE I CONCRETE REPAIR	SF	525
4	TYPE II CONCRETE REPAIR	SF	270
5	TYPE III CONCRETE REPAIR	SF	60
6	TEMPORARY SHORING SYSTEM	LS	1
7	PROTECTIVE COATING	SF	855

R. J. Behar
 6801 S.W. 100th Avenue, Suite 302
 Fort Lauderdale, Florida 33304
 (954) 388-7771 Fax: (954) 388-7783

DATE: _____
 DRAWN BY: EA
 DESIGNED BY: JC
 CHECKED BY: NS
 FIELD BOOK: _____

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
 100 North Andrews Avenue, Fort Lauderdale, Florida 33301

NO.	DATE	BY	DESCRIPTION

NOT FOR CONSTRUCTION

PROJECT ID: P12170
 GTL WWTP PRE-TREATMENT BUILDING
 REPAIR ASSESSMENT

GENERAL NOTES

1901 EISENHOWER BLVD FORT LAUDERDALE, FL 33316

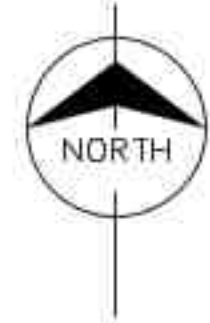
SHEET NO: **2**

TOTAL: **22055**

RJ BEHAR PROJECT No: **22055**

DRAWING FILE NO: P12170-2-NOTE.dwg

This item has been digitally signed and sealed by Nestor Santana on the date adjacent to the seal. Printed copies of digitally signed, dated, and sealed documents are not considered signed and sealed.



- NOTES:**
- ① CONCRETE REPAIRS TYPE I
1 THROUGH 29
ON THIS PAGE 1, 2, 3, 4, 5,
6, 7, 8, 11, 12, 13, 14, 15,
17 & 18.
 - ② CONCRETE REPAIRS TYPE II
30 THROUGH 49
ON THIS PAGE 30, 31, 32,
33, 34, 39, 42, 44, 46,
48 & 49
 - ③ CONCRETE REPAIR TYPE III
50
ON THIS PAGE
50

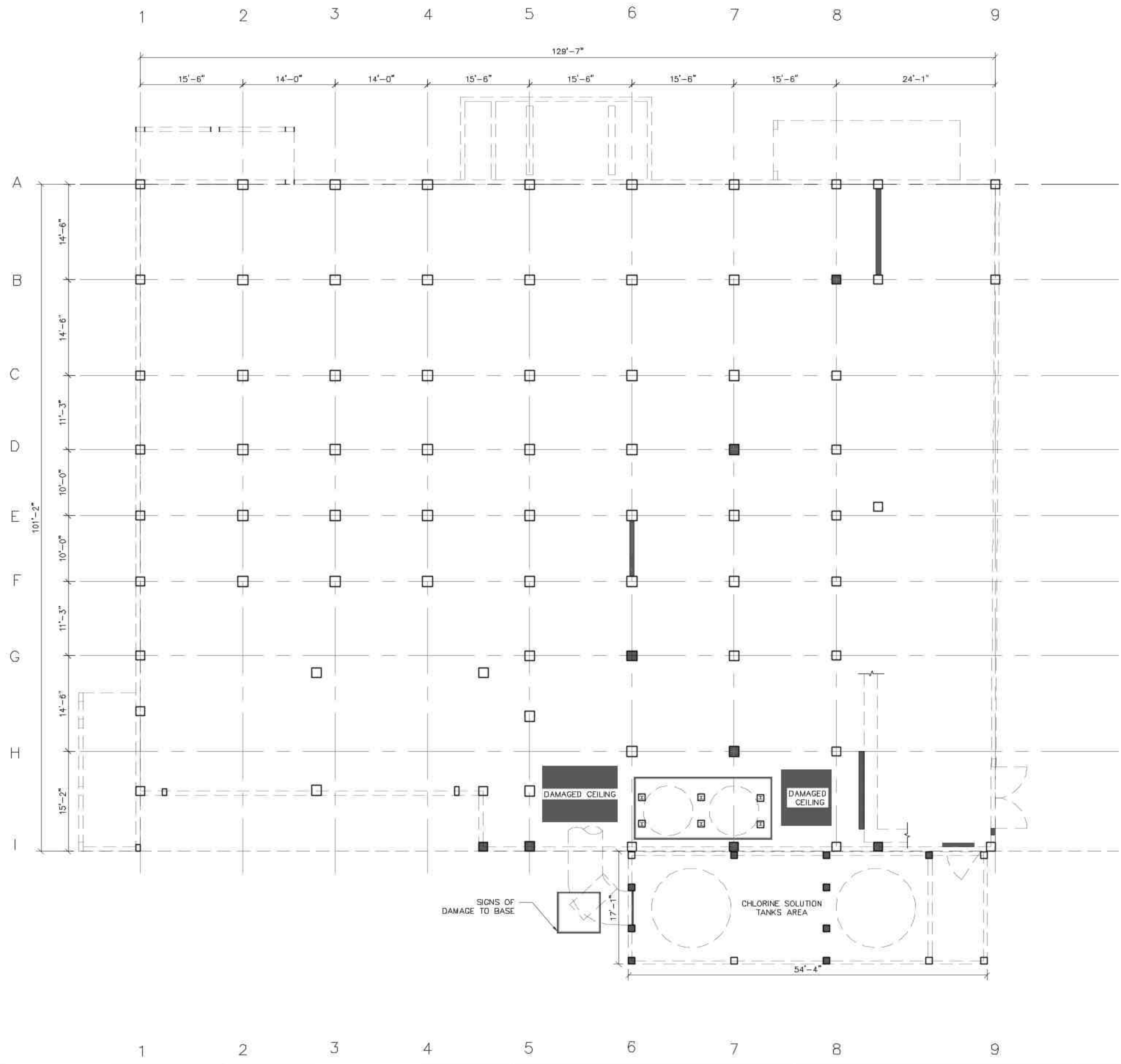
DATE	
DRAWN BY: EA	
DESIGNED BY: SCALE: JC	
CHECKED BY: NS	1/8"=1'-0"
FIELD BOOK	

NO.	DATE	BY	CHKD	DESCRIPTION

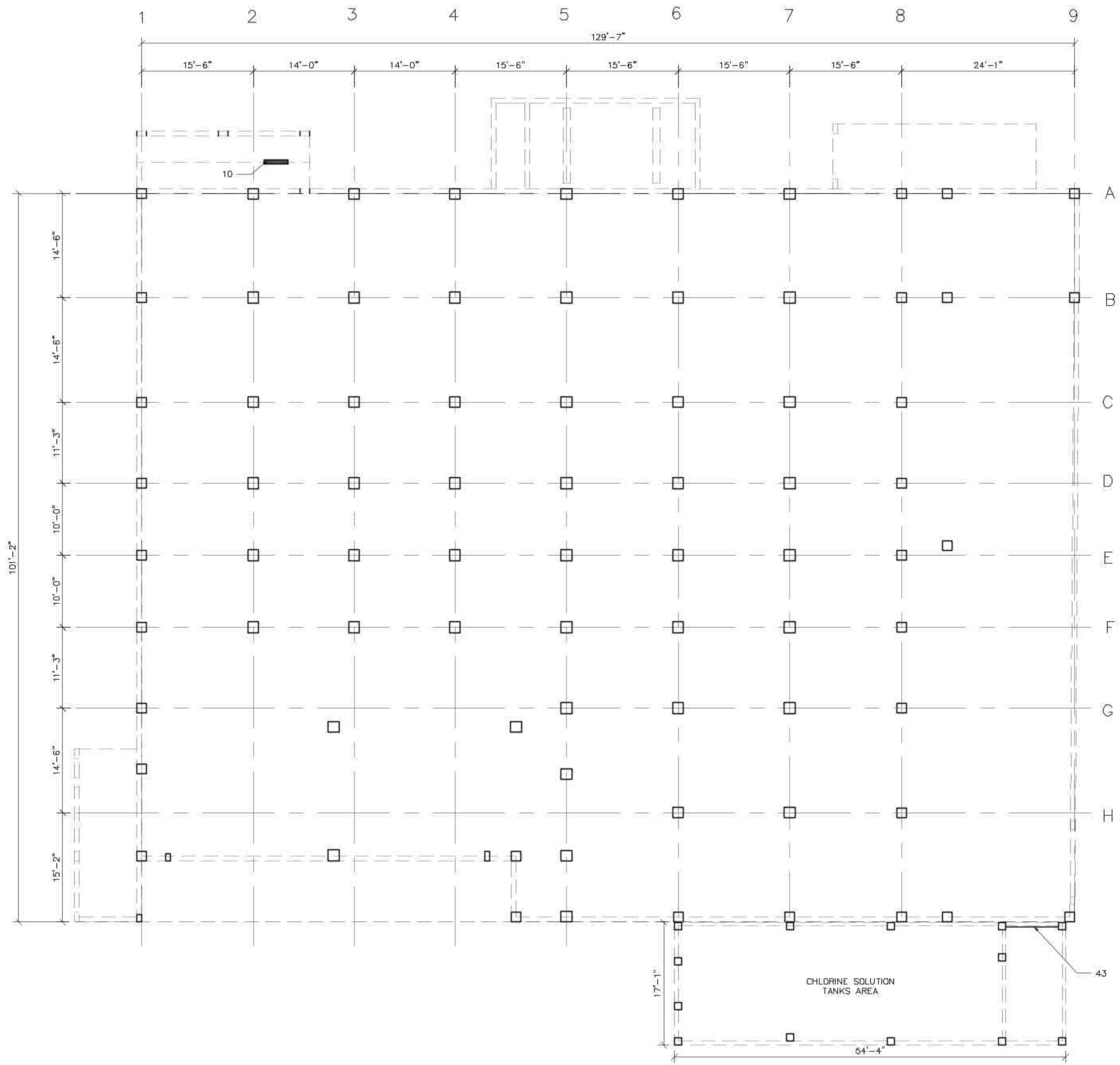
NOT FOR CONSTRUCTION

PROJECT ID: P12170
 GTL WWTP PRE-TREATMENT BUILDING
 REPAIR ASSESSMENT
LOWER LEVEL PLAN VIEW
 1901 EIBENHOWER BLVD FORT LAUDERDALE, FL 33316

SHEET NO.	3
TOTAL	10
R.J. BEHAR PROJECT NO.	22055
DRAWING FILE NO.	P12170-MULTI-PLAN.dwg



This item has been digitally signed and sealed by Nestor Santana on the date adjacent to the seal. Printed copies of digitally signed, dated, and sealed documents are not considered signed and sealed.



- NOTES:**
- ① CONCRETE REPAIRS TYPE I
1 THROUGH 29
ON THIS PAGE: 10
 - ② CONCRETE REPAIRS TYPE II
30 THROUGH 49
ON THIS PAGE: 43
 - ③ CONCRETE REPAIR TYPE III
50
ON THIS PAGE:

REPAIR AREA



R.J. Behar
 6801 S.W. 18th Avenue, Suite 502
 Fort Lauderdale, FL 33301
 (954) 882-7771 Fax: (954) 882-7781

DATE	
DRAWN BY: EA	
DESIGNED BY: SCALE: JC	
CHECKED BY: NS	1/8"=1'-0"
FIELD BOOK	

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
 100 North Andrews Avenue, Fort Lauderdale, Florida 33301

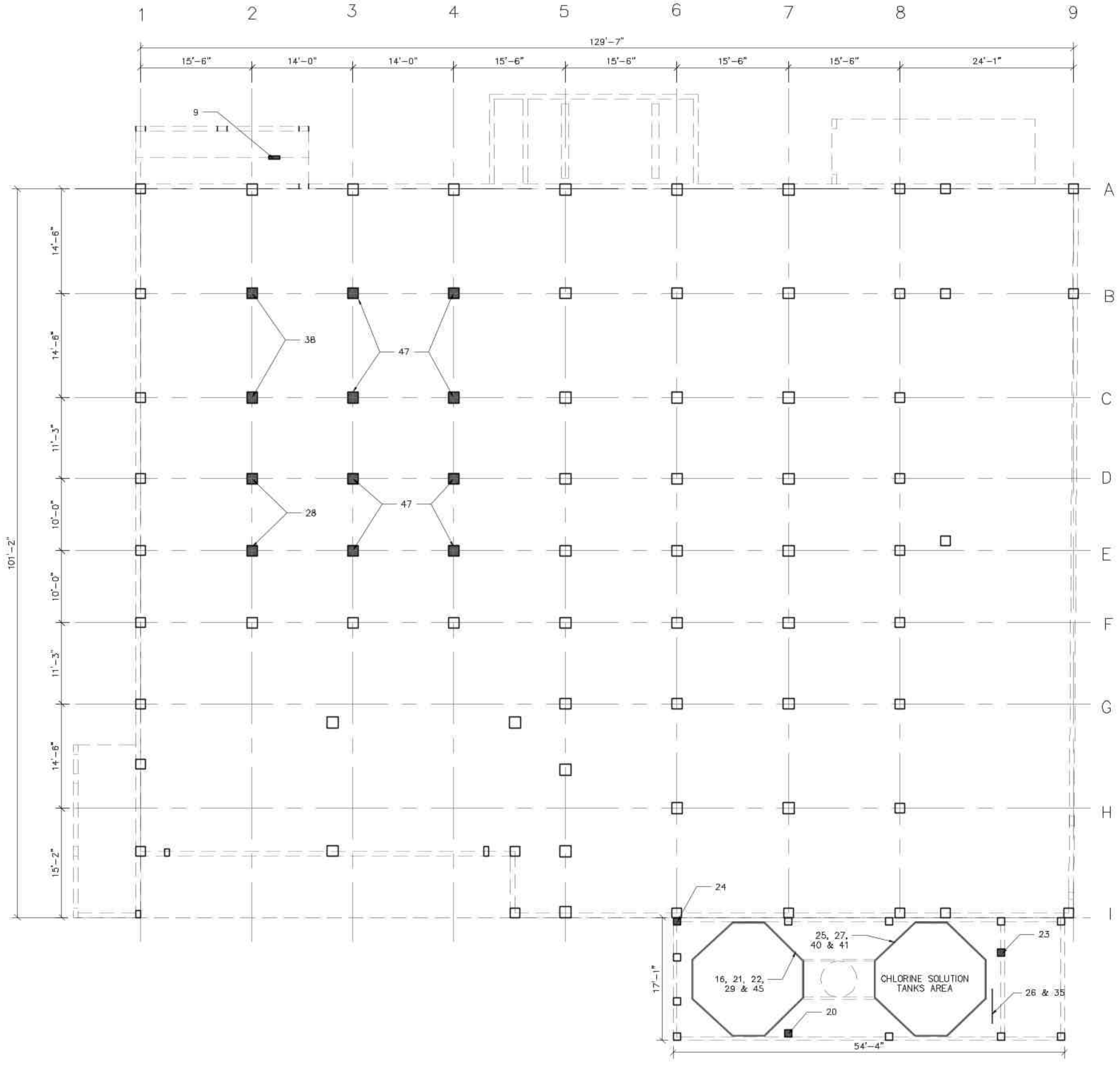
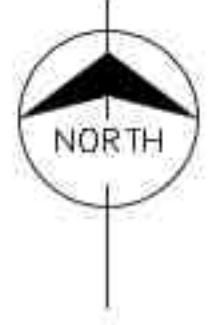
REVISIONS	
NO.	DESCRIPTION

PROJECT ID: P12170
GTL WWTP PRE-TREATMENT BUILDING
REPAIR ASSESSMENT
UPPER LEVEL PLAN VIEW
1901 EIBENHOWER BLVD FORT LAUDERDALE, FL 33316

SHEET NO.	4
TOTAL	10
R.J. BEHAR PROJECT NO.	22055
DRAWING FILE NO.	P12170-MULTI-PLA1.dwg

NOT FOR CONSTRUCTION

This item has been digitally signed and sealed by Nestor Santana on the date adjacent to the seal. Printed copies of digitally signed, dated, and sealed documents are not considered signed and sealed.



- NOTES:**
- ① CONCRETE REPAIRS TYPE I
1 THROUGH 29
ON THIS PAGE: 9, 16, 20, 21,
22, 23, 24, 25, 26, 27, 28
& 29.
 - ② CONCRETE REPAIRS TYPE II
30 THROUGH 49
ON THIS PAGE: 35, 38, 40,
41, 45 & 47
 - ③ CONCRETE REPAIR TYPE III
50
ON THIS PAGE:

DATE	
DRAWN BY: EA	
DESIGNED BY: SCALE: JC	
CHECKED BY: NS	1/8"=1'-0"
FIELD BOOK	

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
 100 North Andrews Avenue, Fort Lauderdale, Florida 33301

NO.	DATE	BY: CHKD	DESCRIPTION

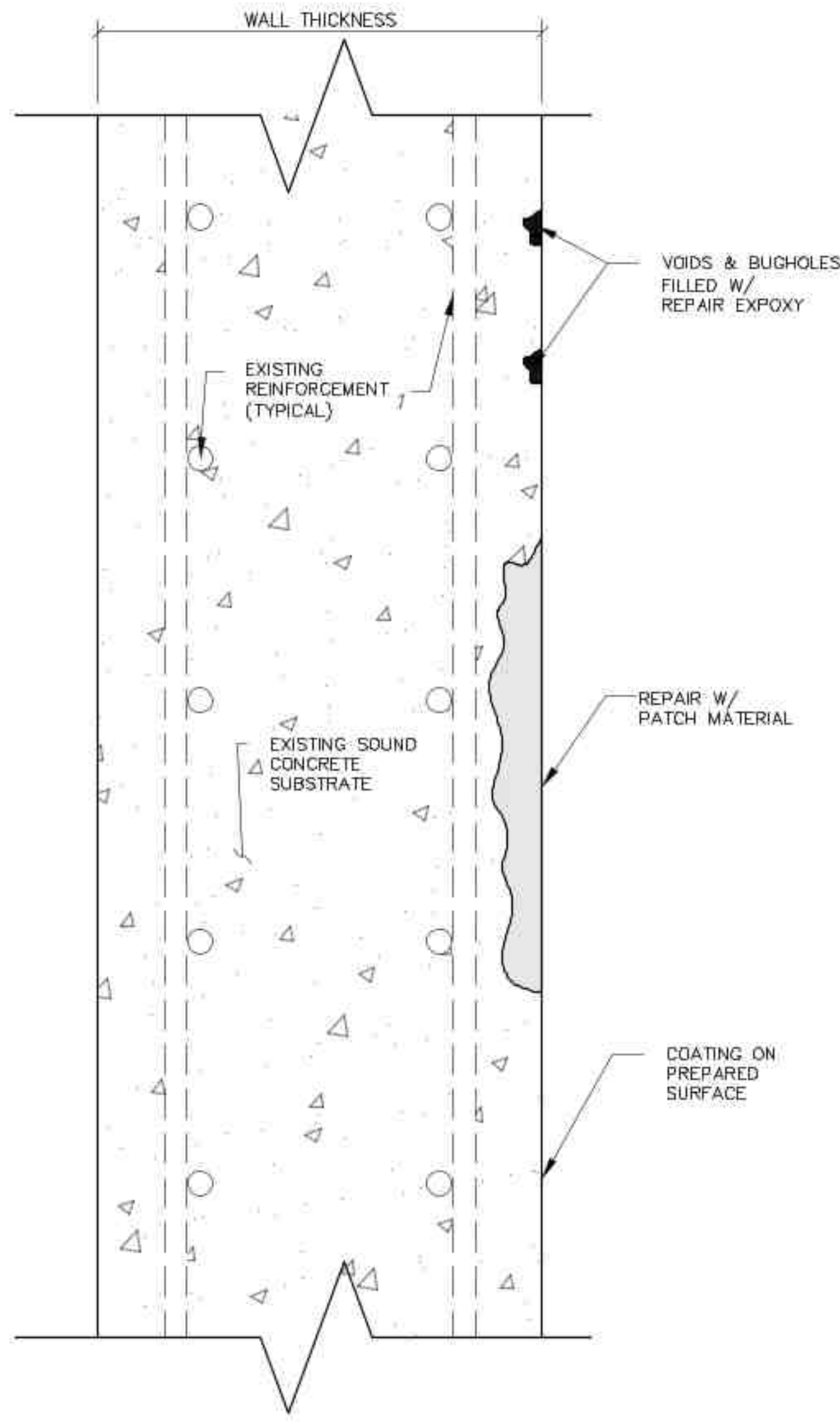
NOT FOR CONSTRUCTION

PROJECT ID: P12170
 GTL WWTP PRE-TREATMENT BUILDING
 REPAIR ASSESSMENT
INT LEVEL PLAN VIEW
 1901 EIBENHOWER BLVD FORT LAUDERDALE, FL 33316

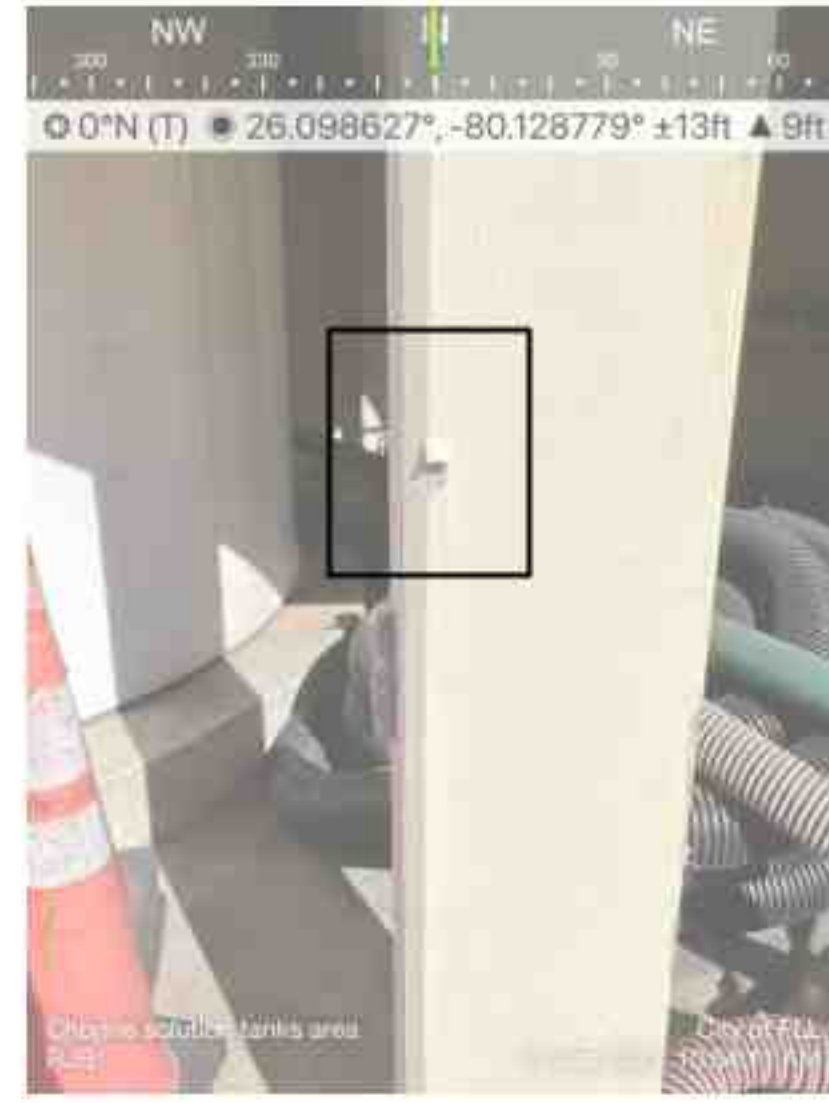
REPAIR AREA

SHEET NO.	5
TOTAL	10
R.J. BEHAR PROJECT NO.	22055
DRAWING FILE NO.	P12170-MULTI-PLAN.dwg

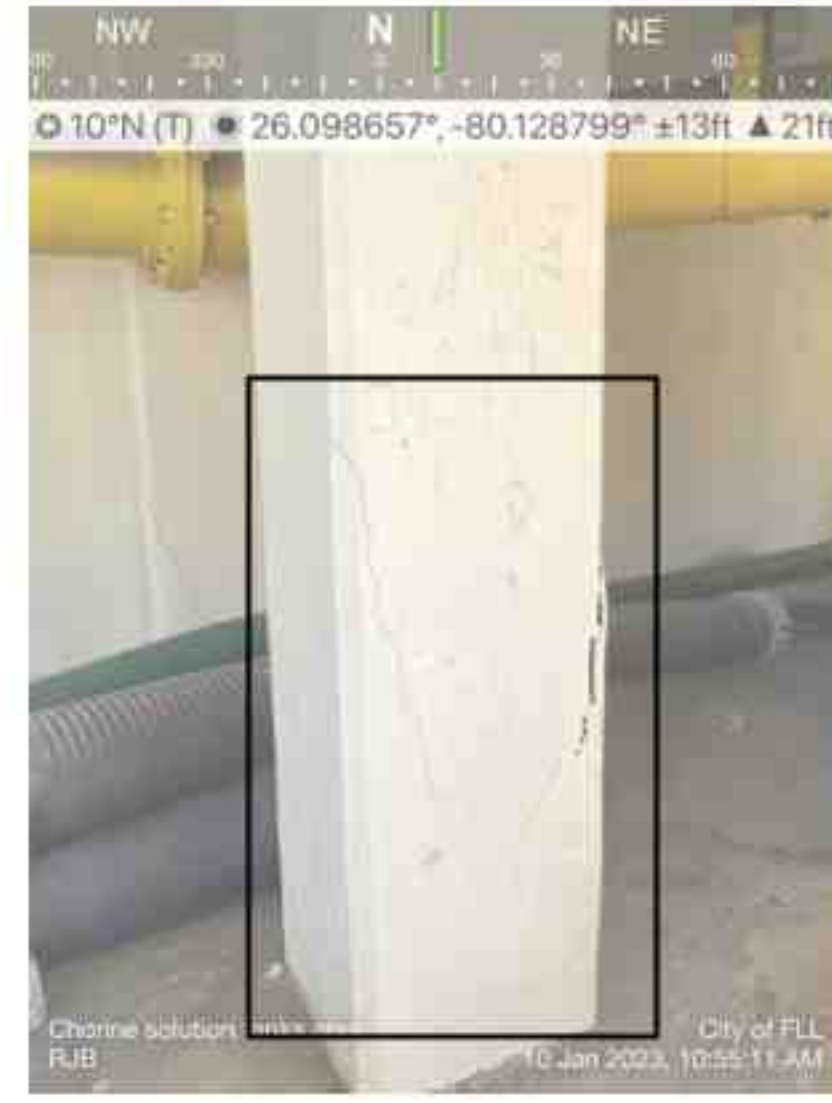
This item has been digitally signed and sealed by Nestor Santana on the date adjacent to the seal. Printed copies of digitally signed, dated, and sealed documents are not considered signed and sealed.



TYPICAL TYPE I REPAIR DETAIL
SCALE: N.T.S.



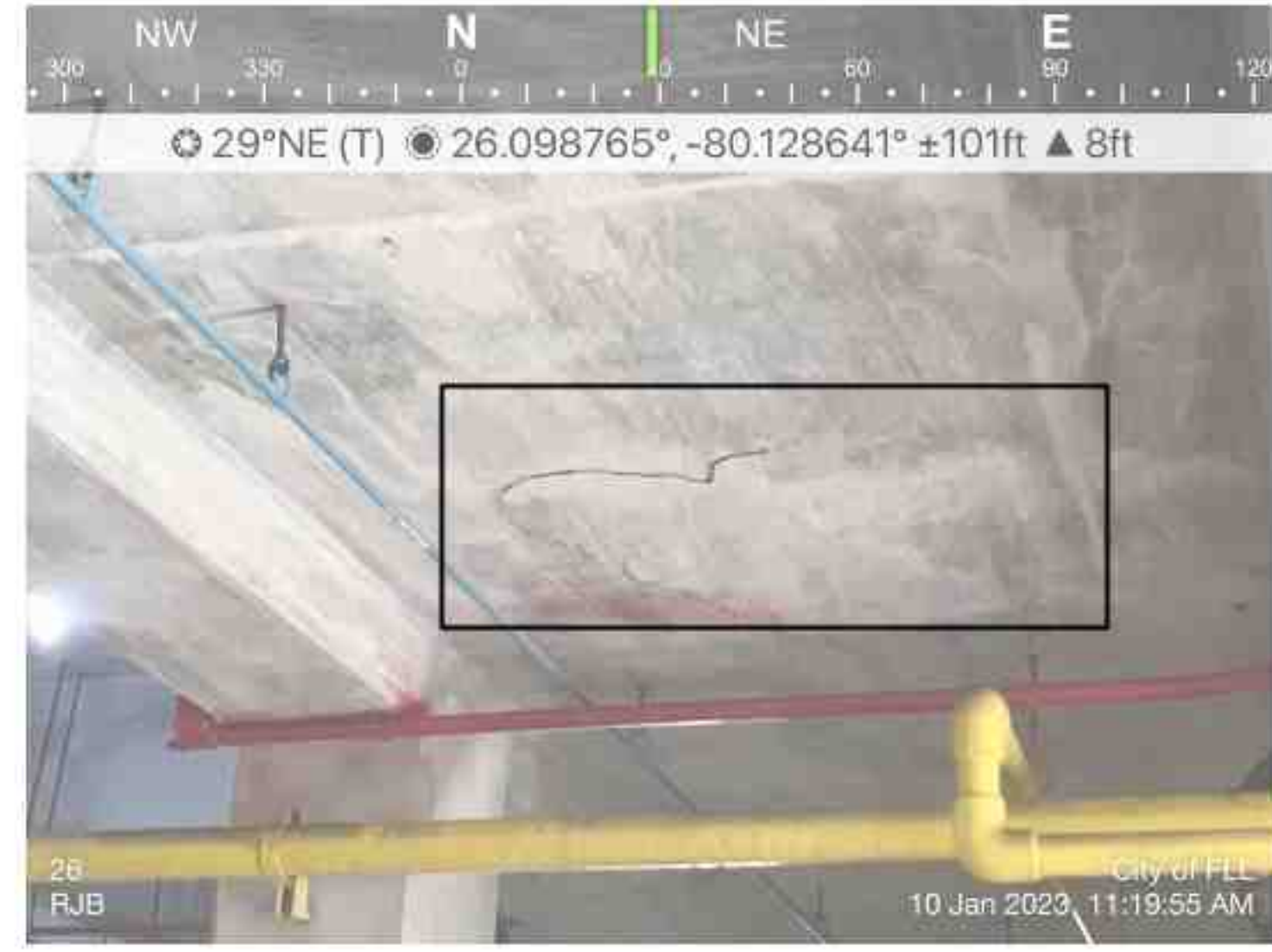
REPAIR 1



REPAIR 2



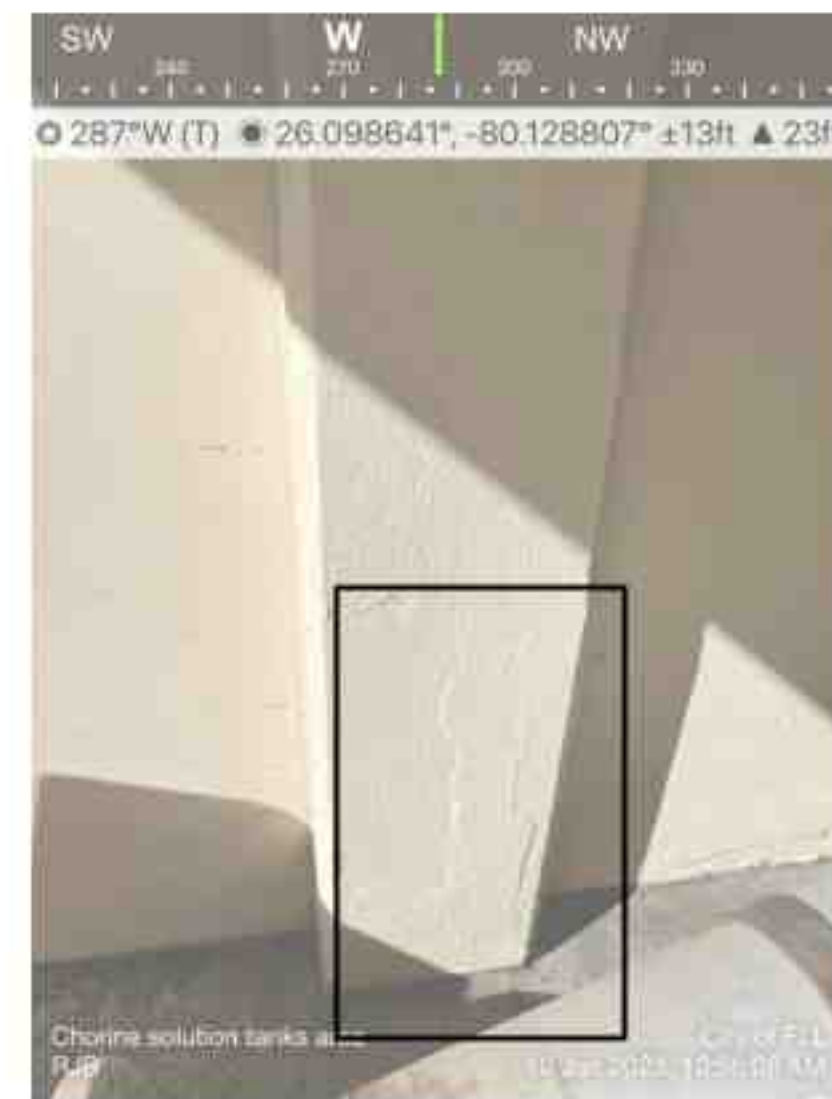
REPAIR 3



REPAIR 4



REPAIR 5



REPAIR 6



REPAIR 7



REPAIR 9



REPAIR 8



REPAIR 11



REPAIR 12



REPAIR 10

NOTE:
ANY REPAIR IN THIS SECTION SHOWING CORROSION IN REINFORCEMENT SHOULD BE TREATED AS REPAIR TYPE II IF STEEL SHOWS LESS THAN 20% LOSS. IF STEEL HAS MORE THAN 20% LOSS THEN THE REPAIR SHOULD BE TREATED AS REPAIR TYPE III. NOTIFY ENGINEER.

This item has been digitally signed and sealed by Nestor Santana on the date adjacent to the seal. Printed copies of digitally signed, dated, and sealed documents are not considered signed and sealed.

R. J. Behar

6861 S.W. 16th Avenue, Suite 302
Fort Lauderdale, FL 33316
(954) 586-7771 Fax: (954) 586-7780

PROJECT ID: P12170
GTL WWTP PRE-TREATMENT BUILDING
REPAIR ASSESSMENT

CONCRETE REPAIR TYPE I

1801 EISENHOWER BLVD FORT LAUDERDALE, FL 33316

SHEET NO. **6**

TOTAL: **6**

R.J. BEHAR PROJECT No.: **22055**

DRAWING FILE NO.: **P12170-MULTI-DET1.dwg**

NO.	DATE	BY	CHKD	DESCRIPTION

DRAWN BY: EA

DESIGNED BY: JC

CHECKED BY: NS

SCALE: N.T.S.

FIELD BOOK:

CITY OF FORT LAUDERDALE

PUBLIC WORKS DEPARTMENT

ENGINEERING & ARCHITECTURE

100 North Andrews Avenue, Fort Lauderdale, Florida 33301

NOT FOR CONSTRUCTION



REPAIR 13



REPAIR 14



REPAIR 15



REPAIR 16



REPAIR 17



REPAIR 18



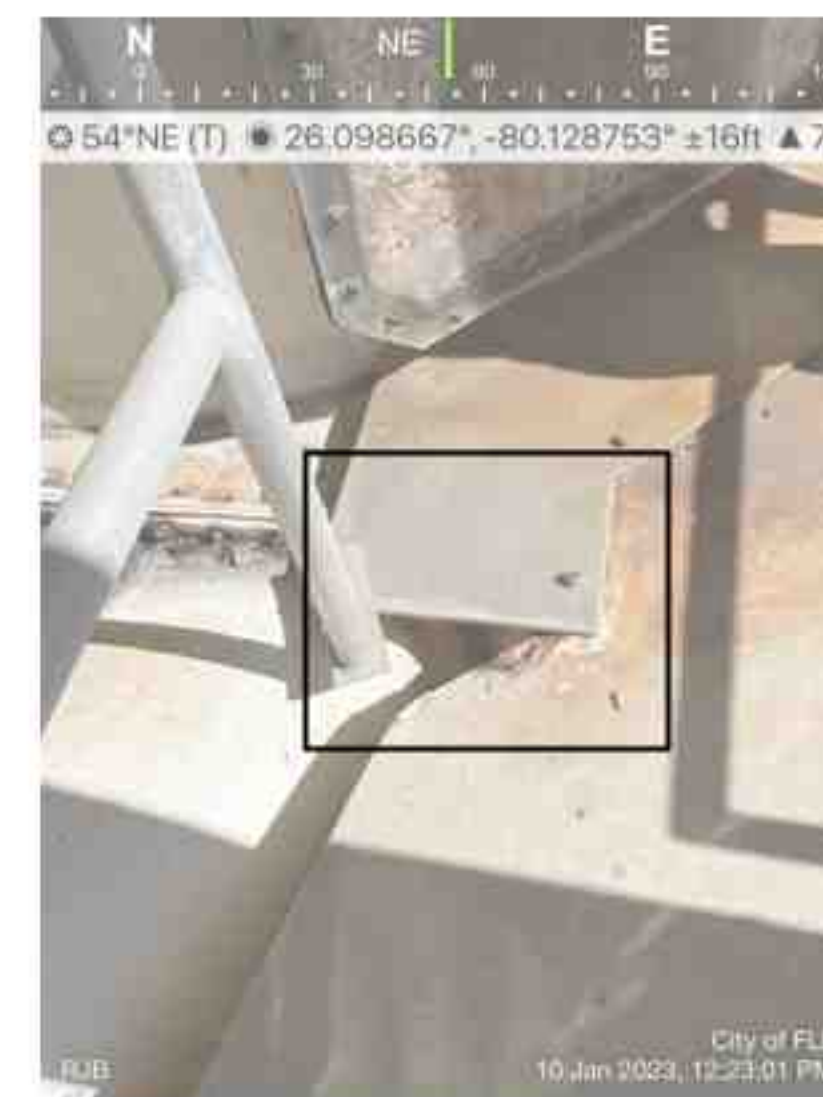
REPAIR 19



REPAIR 20



REPAIR 21



REPAIR 22



REPAIR 23



REPAIR 24



REPAIR 25



REPAIR 26



REPAIR 27



REPAIR 28



REPAIR 29

NOTE:

ANY REPAIR IN THIS SECTION SHOWING CORROSION IN REINFORCEMENT SHOULD BE TREATED AS REPAIR TYPE II IF STEEL SHOWS LESS THAN 20% LOSS. IF STEEL HAS MORE THAN 20% LOSS THEN THE REPAIR SHOULD BE TREATED AS REPAIR TYPE III. NOTIFY ENGINEER.

This item has been digitally signed and sealed by Nestor Santana on the date adjacent to the seal. Printed copies of digitally signed, dated, and sealed documents are not considered signed and sealed.



PROJECT ID: P12170
 GTL WWTP PRE-TREATMENT BUILDING
 REPAIR ASSESSMENT
 CONCRETE REPAIR TYPE I
 1801 EISENHOWER BLVD FORT LAUDERDALE, FL 33316

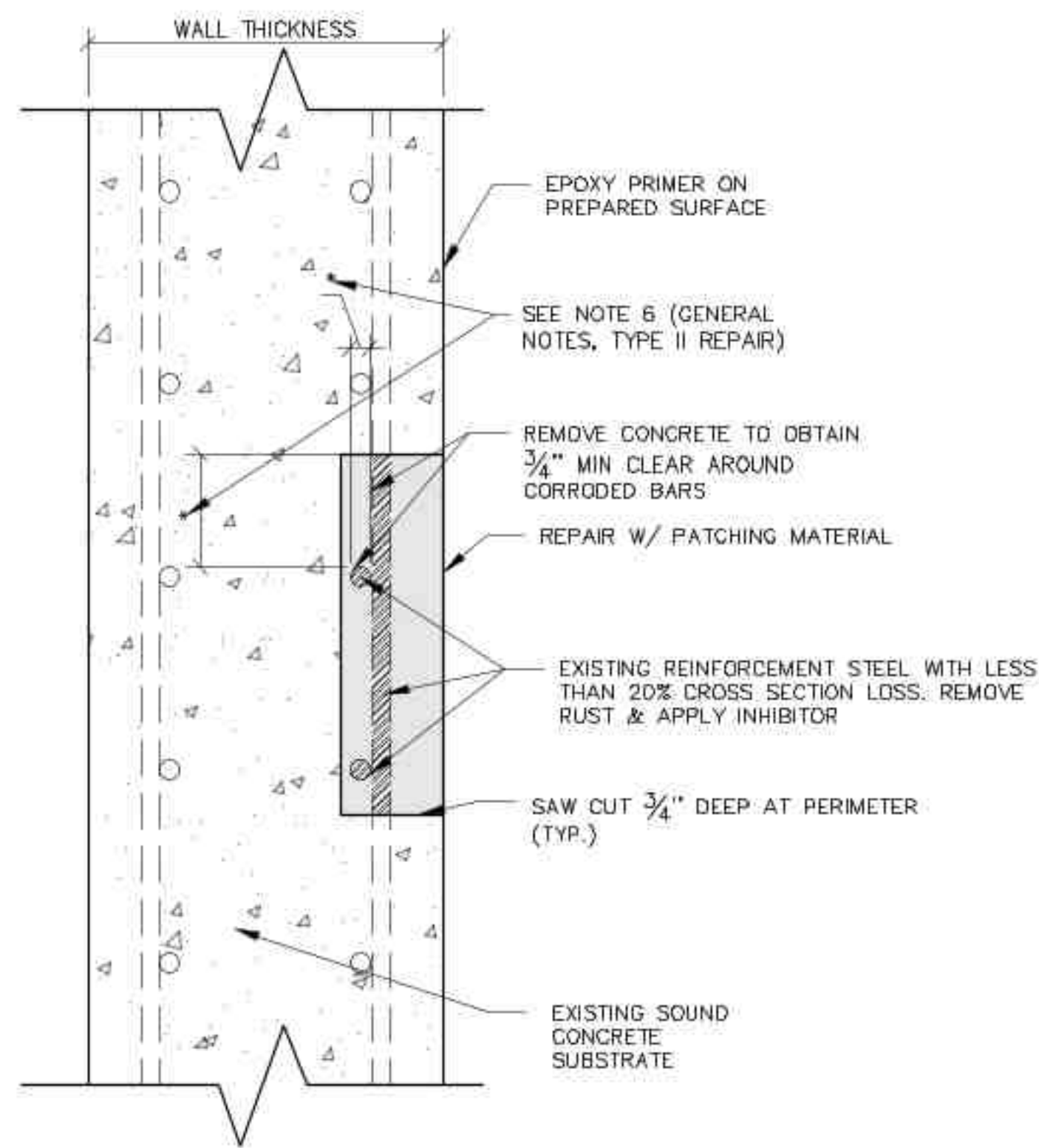
CITY OF FORT LAUDERDALE
 PUBLIC WORKS DEPARTMENT
 ENGINEERING & ARCHITECTURE
 100 North Andrews Avenue, Fort Lauderdale, Florida 33301

NO.	DATE	BY	CHKD	DESCRIPTION

PROJECT ID: P12170
 GTL WWTP PRE-TREATMENT BUILDING
 REPAIR ASSESSMENT
 CONCRETE REPAIR TYPE I
 1801 EISENHOWER BLVD FORT LAUDERDALE, FL 33316

SHEET NO. 7
 TOTAL 8
 R.J. BEHAR PROJECT No. 22055
 DRAWING FILE NO. P12170-MULTI-DET1.dwg

NOT FOR CONSTRUCTION



TYPICAL TYPE II REPAIR DETAIL
SCALE: N.T.S.



REPAIR 30



REPAIR 31



REPAIR 32



REPAIR 34



REPAIR 33



REPAIR 35



REPAIR 36



REPAIR 38



REPAIR 37



REPAIR 40



REPAIR 41



REPAIR 39

NOTE:

ANY REPAIR IN THIS SECTION SHOWING NO CORROSION IN REINFORCEMENT SHOULD BE TREATED AS REPAIR TYPE I. ANY REPAIR IN THIS SECTION SHOWING CORROSION IN REINFORCEMENT SHOULD BE TREATED AS REPAIR TYPE II IF STEEL SHOWS LESS THAN 20% LOSS. IF STEEL HAS MORE THAN 20% LOSS THEN THE REPAIR SHOULD BE TREATED AS REPAIR TYPE III. NOTIFY ENGINEER.



DATE: _____
DRAWN BY: EA
DESIGNED BY: SCALE: N.T.S.
CHECKED BY: JC
FIELD BOOK: NS

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

NO.	DATE	BY	CHKD	DESCRIPTION

PROJECT ID: P12170
GTL WWTP PRE-TREATMENT BUILDING
REPAIR ASSESSMENT
CONCRETE REPAIR TYPE II
1801 EISENHOWER BLVD FORT LAUDERDALE, FL 33316

SHEET NO.: **8**
TOTAL: **10**
R.J. BEHAR PROJECT No.: **22055**
DRAWING FILE NO.: **P12170-MULTI-DET.dwg**

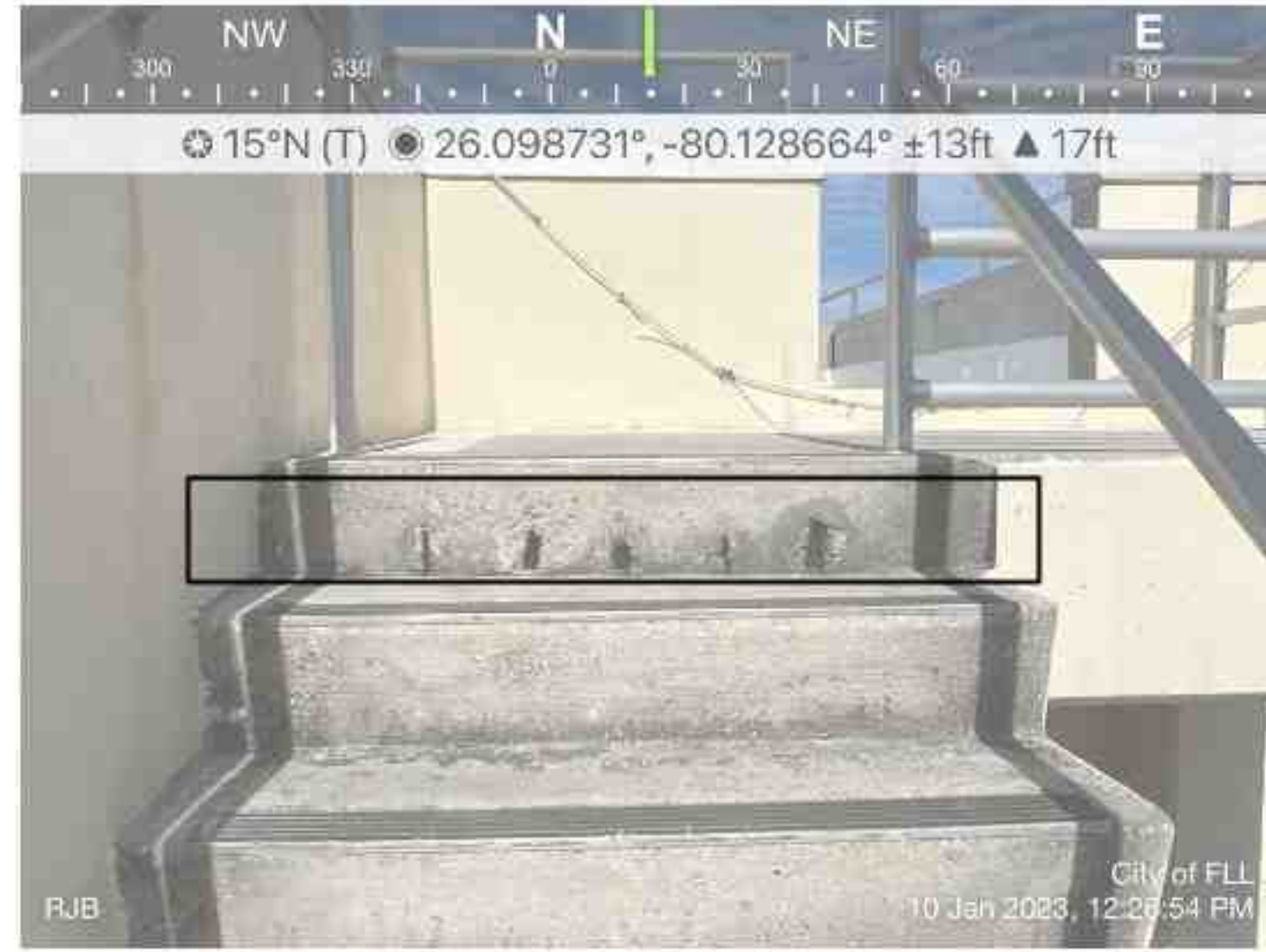
NOT FOR CONSTRUCTION

This item has been digitally signed and sealed by Nestor Santana on the date adjacent to the seal. Printed copies of digitally signed, dated, and sealed documents are not considered signed and sealed.

I:\22055_GTL WWTP Pre-treatment Repair Assessment\CAD\1005A\12170-MULTI-DET.dwg - Wednesday, June 26, 2024 2:07:47 PM



REPAIR 42



REPAIR 43



REPAIR 44



REPAIR 45



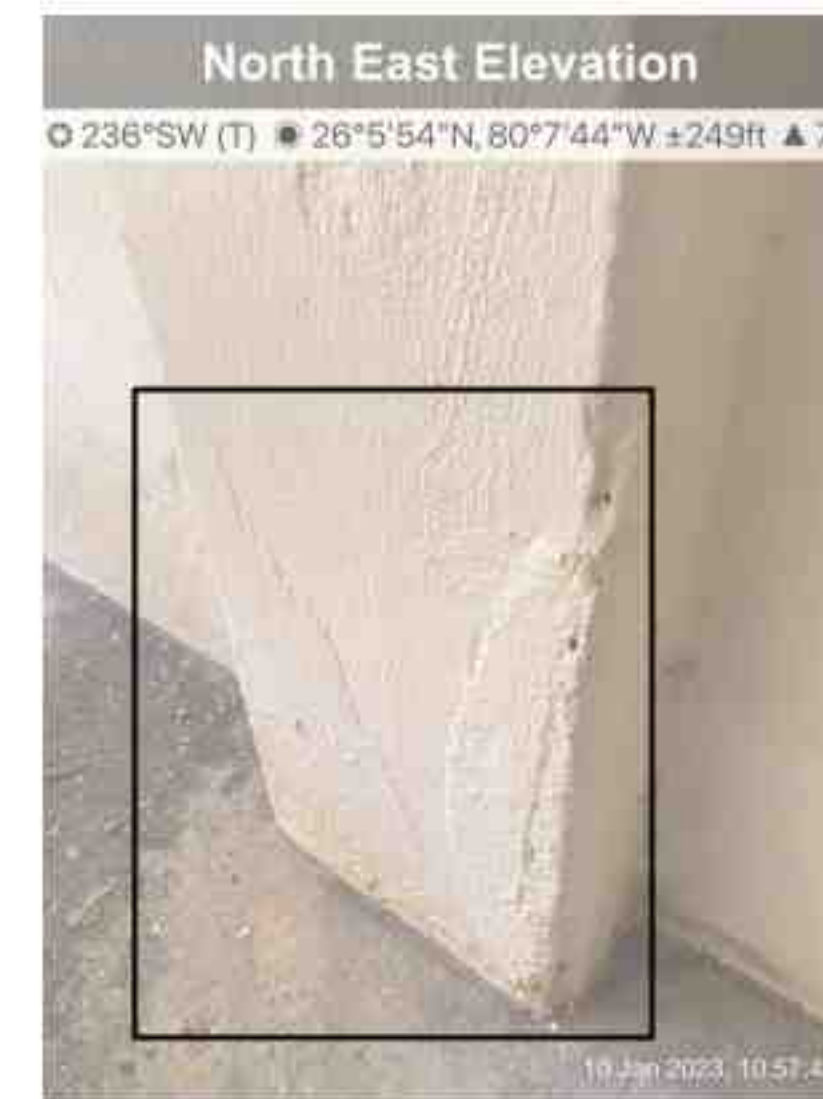
REPAIR 46



REPAIR 47



REPAIR 48



REPAIR 49

NOTE:

ANY REPAIR IN THIS SECTION SHOWING NO CORROSION IN REINFORCEMENT SHOULD BE TREATED AS REPAIR TYPE I. ANY REPAIR IN THIS SECTION SHOWING CORROSION IN REINFORCEMENT SHOULD BE TREATED AS REPAIR TYPE II IF STEEL SHOWS LESS THAN 20% LOSS. IF STEEL HAS MORE THAN 20% LOSS THEN THE REPAIR SHOULD BE TREATED AS REPAIR TYPE III. NOTIFY ENGINEER.

NOT FOR CONSTRUCTION

PROJECT ID: P12170
 GTL WWTP PRE-TREATMENT BUILDING
 REPAIR ASSESSMENT
CONCRETE REPAIR TYPE II
 1801 EISENHOWER BLVD FORT LAUDERDALE, FL 33316

NO	DATE	BY	CHKD	DESCRIPTION

SHEET NO. 9
 TOTAL 10
 R.J. BEHAR PROJECT No. 22055
 DRAWING FILE NO. P12170-MULTI-DET.dwg

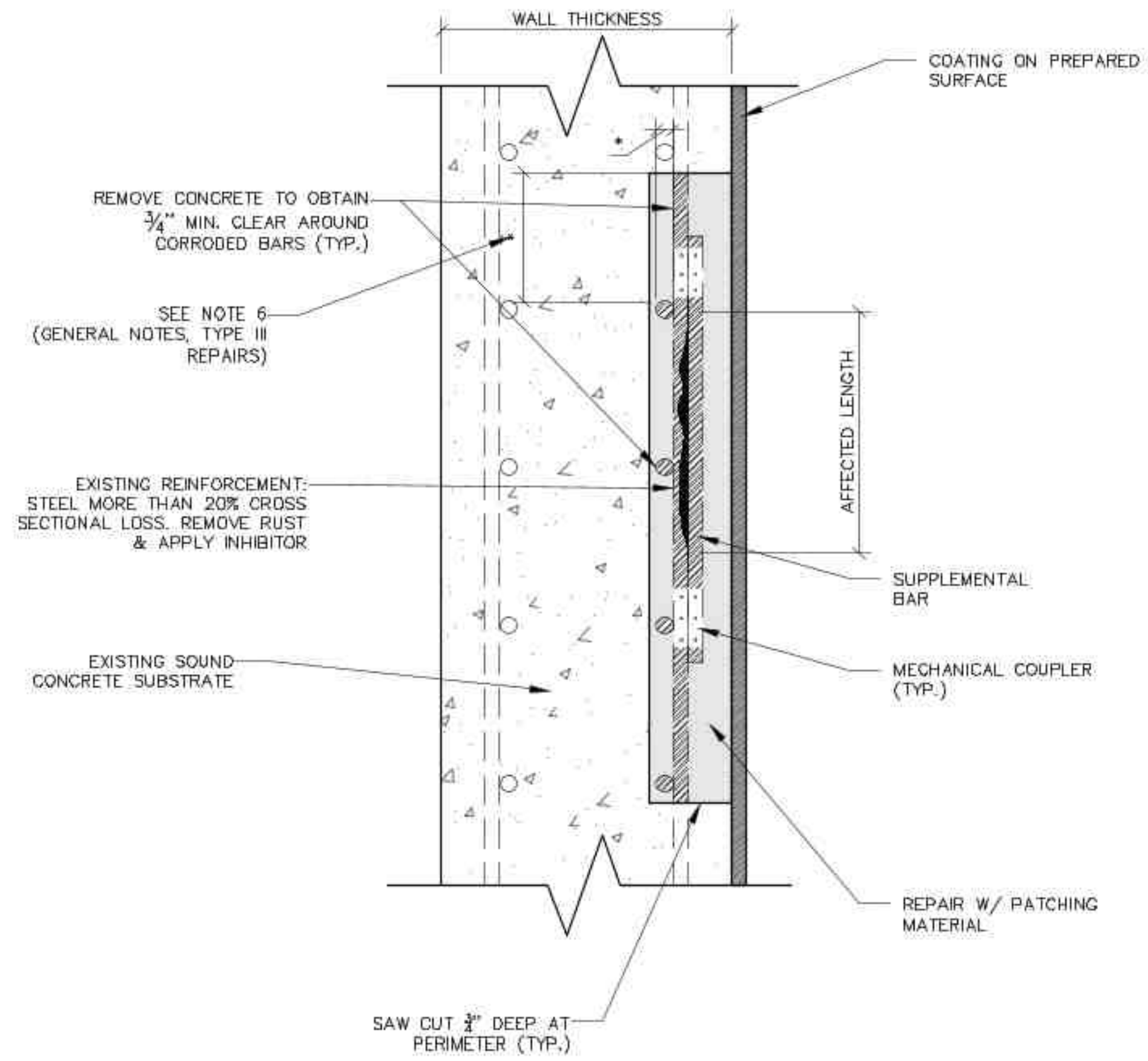
NO	DATE	BY	CHKD	DESCRIPTION

CITY OF FORT LAUDERDALE
 PUBLIC WORKS DEPARTMENT
 ENGINEERING & ARCHITECTURE
 100 North Andrews Avenue, Fort Lauderdale, Florida 33301

DRAWN BY: EA
 DESIGNED BY: JC
 CHECKED BY: NS
 FIELD BOOK: N.T.S.

R.J. Behar
 6861 S.W. 16th Avenue, Suite 302
 Fort Lauderdale, Florida 33324
 (954) 566-7771 Fax (954) 566-7780

This item has been digitally signed and sealed by Nestor Santana on the date adjacent to the seal. Printed copies of digitally signed, dated, and sealed documents are not considered signed and sealed.



TYPICAL TYPE III REPAIR DETAIL
SCALE: N.T.S.



REPAIR 50

NOTE:

ANY REPAIR IN THIS SECTION SHOWING CORROSION IN REINFORCEMENT SHOULD BE TREATED AS REPAIR TYPE II IF STEEL SHOWS LESS THAN 20% LOSS. IF STEEL HAS MORE THAN 20% LOSS THEN THE REPAIR SHOULD BE TREATED AS REPAIR TYPE III. NOTIFY ENGINEER.

This item has been digitally signed and sealed by Nestor Santana on the date adjacent to the seal. Printed copies of digitally signed, dated, and sealed documents are not considered signed and sealed.

NOT FOR CONSTRUCTION

PROJECT ID: P12170
GTL WWTP PRE-TREATMENT BUILDING
REPAIR ASSESSMENT
CONCRETE REPAIR TYPE III
1801 EISENHOWER BLVD, FORT LAUDERDALE, FL 33316

SHEET NO. 10

TOTAL: 10

R.J. BEHAR PROJECT No. 22055

DRAWING FILE NO. P12170-MULTI-DET1.dwg

NO.	DATE	BY	CHKD	DESCRIPTION

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

DRAWN BY: EA
DESIGNED BY: JC
CHECKED BY: NS
FIELD BOOK: N.T.S.

R.J. Behar
6801 S.W. 18th Avenue, Suite 302
Pembroke Pines, Florida 33322
(954) 682-7771 Fax: (954) 682-7790

CONSTRUCTION BID CERTIFICATION

Please Note: It is the sole responsibility of the bidder to ensure that his bid is submitted electronically through www.BidSync.com prior to the bid opening date and time listed. Paper bid submittals will not be accepted. 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) [text box]

Address: [text box]

City: [text box] State: [text box] Zip: [text box]

Telephone No.: [text box] FAX No.: [text box] Email: [text box]

Check box if your firm qualifies for MBE / SBE / 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.

Grid for listing individuals: Name, Title, Name, Title (two rows)

ADDENDUM ACKNOWLEDGEMENT - Bidder acknowledges that the following addenda have been received and are included in the proposal:

Table with 6 columns: Addendum No., Date Issued, Addendum No., Date Issued, Addendum No., Date Issued

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.

[Large empty text box for variances]

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.

Submitted by:

[text box] Name (printed)

[text box] Signature

[text box] Date

[text box] 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? Include the year, description, and contract value.

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, telephone numbers and e-mail addresses). Include the project name, year, description, and contract value.

<input type="text"/>
<input type="text"/>
<input type="text"/>

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:

Engineering Contractor's License #
(County/State)

Expiration Date:

NOTE: To be considered for award of this contract, the bidder must submit a financial statement upon request.

NOTE: Contractor must have proper licensing and shall provide copy of same with his proposal.

QUESTIONNAIRE SHEET

1. Have you personally inspected the proposed work and have you a complete plan for its performance?

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?

4. What equipment will you purchase for the proposed work?

5. What equipment will you rent for the proposed work?

SPECIFIC REFERENCES FORM

The contractor shall have previous construction experience in the State of Florida with projects of similar scope and scale (or larger) as specified in Section 8, Special Conditions. Complete this form in its entirety. **Note: Do not include proposed team members or parent/subsidiary companies as references in your submittal.**

PRIME BIDDER'S NAME: _____

CLIENT NO. 1 – Name of firm to be contacted: _____

Address: _____

Contact Person: _____

Phone No: _____

Contact E-Mail Address: _____

Project Performance Period: _____ to _____
Dates should be in mm/yy format

Project Name: _____

Location of Project: _____

Description of the overall scope: _____

Description of work that was self-performed by Bidder: _____

SPECIFIC REFERENCES FORM

CLIENT NO. 2 – Name of firm to be contacted: _____

Address: _____

Contact Person: _____

Phone No: _____

Contact E-Mail Address: _____

Project Performance Period: _____ to _____
Dates should be in mm/yy format

Project Name: _____

Location of Project: _____

Description of the overall scope: _____

Description of work that was self-performed by Bidder: _____

SPECIFIC REFERENCES FORM

CLIENT NO. 3 – Name of firm to be contacted: _____

Address: _____

Contact Person: _____

Phone No: _____

Contact E-Mail Address: _____

Project Performance Period: _____ to _____
Dates should be in mm/yy format

Project Name: _____

Location of Project: _____

Description of the overall scope: _____

Description of work that was self-performed by Bidder: _____



LOCAL BUSINESS PREFERENCE

Section 2-199.2, Code of Ordinances of the City of Fort Lauderdale, (Ordinance No. C-12-04), provides for a local business preference.

In order to be considered for a local business preference, a bidder must include the Local Business Preference Certification Statement of this ITB, as applicable to the local business preference class claimed **at the time of bid submittal**.

Upon formal request of the City, based on the application of a Local Business Preference the Bidder shall, within ten (10) calendar days, submit the following documentation to the Local Business Preference Class claimed:

- A) Copy of City of Fort Lauderdale current year business tax receipt, **or** Broward County current year business tax receipt, **and**
- B) List of the names of all employees of the bidder and evidence of employees' residence within the geographic bounds of the City of Fort Lauderdale or Broward County, as the case may be, such as current Florida driver license, residential utility bill (water, electric, telephone, cable television), or other type of similar documentation acceptable to the City.

Failure to comply at time of bid submittal shall result in the bidder being found ineligible for the local business preference.

THE COMPLETE LOCAL BUSINESS PREFERENCE ORDINANCE MAY BE FOUND ON THE CITY'S WEB SITE AT THE FOLLOWING LINK:

[https://library.municode.com/fl/fort lauderdale/codes/code of ordinances?nodeId=COOR CH2 AD ARTVFI DIV2PR S2-186LOBUPR](https://library.municode.com/fl/fort%20lauderdale/codes/code%20of%20ordinances?nodeId=COOR_CH2_AD_ARTVFI_DIV2PR_S2-186LOBUPR)

Definitions: The term "Business" shall mean a person, firm, corporation or other business entity which is duly licensed and authorized to engage in a particular work in the State of Florida. Business shall be broken down into four (4) types of classes:

1. Class A Business – shall mean any Business that has established and agrees to maintain a permanent place of business located in a non-residential zone and staffed with full-time employees within the limits of the City **and** shall maintain a staffing level of the prime contractor for the proposed work of at least fifty percent (50%) who are residents of the City.
2. Class B Business - shall mean any Business that has established and agrees to maintain a permanent place of business located in a non-residential zone and staffed with full-time employees within the limits of the City **or** shall maintain a staffing level of the prime contractor for the proposed work of at least fifty percent (50%) who are residents of the City.
3. Class C Business - shall mean any Business that has established and agrees to maintain a permanent place of business located in a non-residential zone **and** staffed with full-time employees within the limits of Broward County.
4. Class D Business – shall mean any Business that does not qualify as either a Class A, Class B, or Class C business.



LOCAL BUSINESS PREFERENCE CERTIFICATION STATEMENT

The Business identified below certifies that it qualifies for the local business price preference classification as indicated herein, and further certifies and agrees that it will re-affirm its local preference classification annually no later than thirty (30) calendar days prior to the anniversary of the date of a contract awarded pursuant to this ITB. Violation of the foregoing provision may result in contract termination.

(1) is a Class A Business as defined in City of Fort Lauderdale Ordinance No. C-17-26, Sec.2-186. A copy of the City of Fort Lauderdale current year Business Tax Receipt and a complete list of full-time employees and evidence of their addresses shall be provided within 10 calendar days of a formal request by the City.

Business Name

(2) is a Class B Business as defined in the City of Fort Lauderdale Ordinance No. C-17-26, Sec.2-186. A copy of the Business Tax Receipt or a complete list of full-time employees and evidence of their addresses shall be provided within 10 calendar days of a formal request by the City.

Business Name

(3) is a Class C Business as defined in the City of Fort Lauderdale Ordinance No. C-17-26, Sec.2-186. A copy of the Broward County Business Tax Receipt shall be provided within 10 calendar days of a formal request by the City.

Business Name

(4) requests a Conditional Class A classification as defined in the City of Fort Lauderdale Ordinance No. C-17-26, Sec.2-186. Written certification of intent shall be provided within 10 calendar days of a formal request by the City.

Business Name

(5) requests a Conditional Class B classification as defined in the City of Fort Lauderdale Ordinance No. C-17-26, Sec.2-186. Written certification of intent shall be provided within 10 calendar days of a formal request by the City.

Business Name

(6) is considered a Class D Business as defined in the City of Fort Lauderdale Ordinance No. C-17-26, Sec.2-186 and does not qualify for Local Preference consideration.

Business Name

BIDDER'S COMPANY: _____

AUTHORIZED COMPANY PERSON: _____
PRINT NAME SIGNATURE DATE



DISADVANTAGED BUSINESS ENTERPRISE (DBE) PREFERENCE

Section 2-185, Code of Ordinances of the City of Fort Lauderdale, provides for a disadvantaged business preference.

In order to be considered for a DBE Preference, a bidder must include a certification from a government agency, as applicable to the DBE Preference class claimed **at the time of bid submittal**.

Upon formal request of the City, based on the application of a DBE Preference the Bidder shall, within ten (10) calendar days, submit the following documentation to the DBE Class claimed:

A) Copy of City of Fort Lauderdale current year business tax receipt, **or** Broward County current year business tax receipt, **or** State of Florida active registration **and/or**

B) List of the names of all employees of the bidder and evidence of employees' residence within the geographic bounds of the City of Fort Lauderdale or Broward County, as the case may be, such as current Florida driver license, residential utility bill (water, electric, telephone, cable television), or other type of similar documentation acceptable to the City.

Failure to comply at time of bid submittal shall result in the bidder being found ineligible for the disadvantaged business preference.

THE COMPLETE DBE PREFERENCE ORDINANCE MAY BE FOUND ON THE CITY'S WEB SITE AT THE FOLLOWING LINK: <https://www.fortlauderdale.gov/home/showpublisheddocument?id=56883>

Definitions

- a. The term "disadvantaged class 1 enterprise" shall mean any disadvantaged business enterprise that has established and agrees to maintain a permanent place of business located in a non-residential zone, staffed with full-time employees within the limits of the city, and provides supporting documentation of its City of Fort Lauderdale business tax and disadvantaged certification as established in the City's Procurement Manual.
- b. The term "disadvantaged class 2 enterprise" shall mean any disadvantaged business enterprise that has established and agrees to maintain a permanent place of business within the limits of the city with a full-time employees and provides supporting documentation of its City of Fort Lauderdale business tax and disadvantaged certification as established in the City's Procurement Manual.
- c. The term "disadvantaged class 3 enterprise" shall mean any disadvantaged business enterprise that has established and agrees to maintain a permanent place of business located in a non-residential zone, staffed with full-time employees within the limits of the Tri-County area and provides supporting documentation of its City of Fort Lauderdale business tax and disadvantaged certification as established in the City's Procurement Manual.
- d. The term "disadvantaged class 4 enterprise" shall mean any disadvantaged business enterprise that does not qualify as a Class A, Class B, or Class C business, but is located in the State of Florida and provides supporting documentation of its disadvantaged certification as established in the City's Procurement Manual.



DISADVANTAGED BUSINESS ENTERPRISE CERTIFICATION STATEMENT

The Business identified below certifies that it qualifies for the disadvantaged business enterprise price preference classification as indicated herein, and further certifies and agrees that it will re-affirm its preference classification annually no later than thirty (30) calendar days prior to the anniversary of the date of a contract awarded pursuant to this solicitation. Violation of the foregoing provision may result in contract termination.

(1) is a disadvantaged class 1 enterprise as defined in the City of Fort Lauderdale Ordinance Section 2-185 disadvantaged business enterprise that has established and agrees to maintain a permanent place of business located in a non-residential zone, staffed with full-time employees within the limits of the city, and provides supporting documentation of its City of Fort Lauderdale business tax and disadvantaged certification as established in the City's Procurement Manual.

Business Name

(2) is a disadvantaged class 2 enterprise as defined in the City of Fort Lauderdale Ordinance Section 2-185 disadvantaged business enterprise that has established and agrees to maintain a permanent place of business within the limits of the city with a full-time employee(s) and provides supporting documentation of its City of Fort Lauderdale business tax and disadvantaged certification as established in the City's Procurement Manual.

Business Name

(3) is a disadvantaged class 3 enterprise as defined in the City of Fort Lauderdale Ordinance Section 2-185 disadvantaged business enterprise that has established and agrees to maintain a permanent place of business located in a non-residential zone, staffed with full-time employees within the limits of the Tri-County area and provides supporting documentation of its City of Fort Lauderdale business tax and disadvantaged certification as established in the City's Procurement Manual.

Business Name

(4) is a disadvantaged class 4 enterprise as defined in the City of Fort Lauderdale Ordinance Section 2-185 disadvantaged business enterprise that does not qualify as a Class A, Class B, or Class C business, but is located in the State of Florida and provides supporting documentation of its disadvantaged certification as established in the City's Procurement Manual.

Business Name

(5) is not considered a Disadvantaged Enterprise Business as defined in the City of Fort Lauderdale Ordinance Sec.2-185 and does not qualify for DBE Preference consideration.

Business Name

BIDDER'S COMPANY: _____

AUTHORIZED COMPANY PERSON: _____
PRINT NAME SIGNATURE DATE



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.

Authorized Signature

Title

Name (Printed)

Date



**CONTRACTOR'S CERTIFICATE OF COMPLIANCE WITH
NON-DISCRIMINATION PROVISIONS OF THE CONTRACT**

The completed and signed form should be returned with the Contractor's submittal. If not provided with submittal, the Contractor must submit within three business days of City's request. Contractor may be deemed non-responsive for failure to fully comply within stated timeframes.

Pursuant to City Ordinance Sec. 2-17(a)(i)(ii), bidders must certify compliance with the Non-Discrimination provision of the ordinance.

- A. Contractors doing business with the City shall not discriminate against their employees based on the employee's race, color, religion, gender (including identity or expression), marital status, sexual orientation, national origin, age, disability, or any other protected classification as defined by applicable law.

Contracts. Every Contract exceeding \$100,000, or otherwise exempt from this section shall contain language that obligates the Contractor to comply with the applicable provisions of this section.

The Contract shall include provisions for the following:

- (i) The Contractor certifies and represents that it will comply with this section during the entire term of the contract.
- (ii) The failure of the Contractor to comply with this section shall be deemed to be a material breach of the contract, entitling the City to pursue any remedy stated below or any remedy provided under applicable law.

Authorized Signature

Print Name and Title

Date



CONTRACT PAYMENT METHOD

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 credit card payments via MasterCard or Visa as part of this program.

This allows you as a vendor of the City of Fort Lauderdale to receive your payments fast and safely. No more waiting for checks to be printed and mailed.

In accordance with the contract, payments on this contract will be made utilizing the City's P-Card (MasterCard or Visa). Accordingly, bidders must presently have the ability to accept the credit card or take whatever steps necessary to implement acceptance of a card before the start of the contract term, or contract award by the City.

All costs associated with the Contractor's participation in this purchasing program shall be borne by the Contractor. The City reserves the right to revise this program as necessary.

By signing below, you agree with these terms.

Please indicate which credit card payment you prefer:

____ MasterCard

____ Visa

Company Name

Name (Printed)

Signature

Title

Date



E-VERIFY AFFIRMATION STATEMENT

Solicitation/Bid /Contract No: _____

Project Description:

Contractor/Proposer/Bidder acknowledges and agrees to utilize the U.S. Department of Homeland Security's E-Verify System to verify the employment eligibility of,

- A. all persons employed by Contractor/Proposer/Bidder to perform employment duties within Florida during the term of the Contract, and,
- B. all persons (including subcontractors/vendors) assigned by Contractor/Proposer/Bidder to perform work pursuant to the Contract.

The Contractor/Proposer/Bidder acknowledges and agrees that use of the U.S. Department of Homeland Security's E-Verify System during the term of the Contract is a condition of the Contract.

Contractor/Proposer/ Bidder Company Name: _____

Authorized Company Person's Signature: _____

Authorized Company Person's Title: _____

Date: _____

AFFIDAVIT OF COMPLIANCE WITH FOREIGN ENTITY LAWS
(Florida Statute- §287.138, 692.201, 692.202, 692.203, and 692.204)

The undersigned, on behalf of the entity listed below ("Entity"), hereby attests under penalty of perjury as follows:

1. Entity is not owned by the government of a foreign country of concern as defined in Section 287.138, Florida Statutes. (Source:§ 287.138(2)(a), Florida Statutes)
2. The government of a foreign country of concern does not have a controlling interest in Entity. (Source:§ 287.138(2)(b), Florida Statutes)
3. Entity is not organized under the laws of, and does not have a principal place of business in, a foreign country of concern. (Source: § 287.138(2)(c), Florida Statutes)
4. Entity is not owned or controlled by the government of a foreign country of concern, as defined in Section 692.201, Florida Statutes. (Source:§ 288.007(2), Florida Statutes)
5. Entity is not a partnership, association, corporation, organization, or other combination of persons organized under the laws of or having its principal place of business in a foreign country of concern, as defined in Section 692.201, Florida Statutes, or a subsidiary of such entity. (Source: § 288.007(2), Florida Statutes)
6. Entity is not a foreign principal, as defined in Section 692.201, Florida Statutes. (Source: § 692.202(5)(a)(I), Florida Statutes)
7. Entity is in compliance with all applicable requirements of Sections 692.202, 692.203, and 692.204, Florida Statutes.
8. **(Only applicable if purchasing real property)** Entity is not a foreign principal prohibited from purchasing the subject real property. Entity is either (a) not a person or entity described in Section 692.204(1)(a), Florida Statutes, or (b) authorized under Section 692.204(2), Florida Statutes, to purchase the subject property. Entity is in compliance with the requirements of Section 692.204, Florida Statutes. (Source: §§ 692.203(6)(a), 692.204(6)(a), Florida Statutes)
9. The undersigned is authorized to execute this affidavit on behalf of Entity.

Name: _____ Title: _____ Entity: _____

Signature: _____ Date: _____

NOTARY PUBLIC ACKNOWLEDGEMENT SECTION

STATE OF _____

COUNTY OF _____

The foregoing instrument was acknowledged before me, by means of physical presence or online notarization, this ____ day of _____, 20__, by _____, as _____ for _____, who is personally known to me or who has produced _____ as identification.

Notary Public Signature: _____

(Notary Seal)

Print Name: _____

My commission expires: _____

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.				
B.				
C.				
D.				
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:

Executive Summary Report

Of

Event: 319-2 - GTL-WWTP Pre-Treatment Building Improvements

Buyer: PAULETTE HEMMINGS TURNER

Date Range: 07/25/2024 12:00:00 PM - 08/23/2024 02:00:00 PM

**All Suppliers 2
Responding:**

Suppliers Responding

Supplier	Contact	Phone Number	E Mail	City	State Or Province	Total Bid Amount	Total Awarded	Response Attachment Exists
Razorback LLC	Anthony Houllis	727-938-9500	anthony@razorbackllc.com	Tarpon Springs	FL	437,590.00	0.00	Yes
AMAC	Rodrigo Garrido	5619194636	rodrigogarrido@amacfl.com	Palm Beach Gardens	FL	208,000.00	0.00	Yes

Event Lines And Responses

Item	Description	Unit of Measure	Quantity
1 MOBILIZATION-	1) Mobilization	LS	1.0000

Responses

Supplier	Bid Quantity	Unit of Measure	Unit Price	Award Amount
Razorback LLC	1.0000	LS	40,000.00000000	0.00
AMAC	1.0000	LS	10,600.00000000	0.00

Item	Description	Unit of Measure	Quantity
2 DEMOLITION-	2) Demolition	SF	855.0000

continued...

Responses

Supplier	Bid Quantity	Unit of Measure	Unit Price	Award Amount
Razorback LLC	855.0000	SF	102.00000000	0.00
AMAC	855.0000	SF	40.00000000	0.00

Item	Description	Unit of Measure	Quantity
TYPE I CONCRETE REPAIR-	3) Type I Concrete Repair	SF	525.0000

Responses

Supplier	Bid Quantity	Unit of Measure	Unit Price	Award Amount
Razorback LLC	525.0000	SF	190.00000000	0.00
AMAC	525.0000	SF	150.00000000	0.00

Item	Description	Unit of Measure	Quantity
TYPE II CONCRETE REPAIR-	4) Type II Concrete Repair	SF	270.0000

Responses

Supplier	Bid Quantity	Unit of Measure	Unit Price	Award Amount
Razorback LLC	270.0000	SF	602.00000000	0.00
AMAC	270.0000	SF	200.00000000	0.00

Item	Description	Unit of Measure	Quantity
TYPE III CONCRETE REPAIR-	5) Type III Concrete Repair	SF	60.0000

Responses

Supplier	Bid Quantity	Unit of Measure	Unit Price	Award Amount
Razorback LLC	60.0000	SF	516.00000000	0.00
AMAC	60.0000	SF	300.00000000	0.00

continued...

Item	Description	Unit of Measure	Quantity
TEMPORARY SHORING SYSTEM-	6) Temporary Shoring System	LS	1.0000

Responses

Supplier	Bid Quantity	Unit of Measure	Unit Price	Award Amount
Razorback LLC	1.0000	LS	12,000.00000000	0.00
AMAC	1.0000	LS	2,190.00000000	0.00

Item	Description	Unit of Measure	Quantity
PROTECTIVE COATING-	7) Proctective Coating	SF	855.0000

Responses

Supplier	Bid Quantity	Unit of Measure	Unit Price	Award Amount
Razorback LLC	855.0000	SF	6.00000000	0.00
AMAC	855.0000	SF	12.00000000	0.00

Header Questions And Responses

QUESTION

Did you sign and attach the required forms?

Question Responses

Supplier	Response	Has Attachment
Razorback LLC	Yes	Yes
AMAC	Yes	Yes

continued...

QUESTION

Kindly acknowledge Addendum 1 - Anti-Human Trafficking Affidavit to be completed:

Per Florida Statute 787.06 (2024), (13) When a contract is executed, renewed, or extended between a nongovernmental entity and a governmental entity, the nongovernmental entity must provide the governmental entity with an affidavit signed by an officer or a representative of the nongovernmental entity under penalty of perjury attesting that the nongovernmental entity does not use coercion for labor or services as defined in this section. For purposes of this subsection, the term "governmental entity" has the same meaning as in s. 287.138(1).

Question Responses

Supplier	Response	Has Attachment
Razorback LLC	Yes	No
AMAC	Yes	No

Contacts

Name	Email
PAULETTE HEMMINGS TURNER	pturner@fortlauderdale.gov

Q And A

Supplier	Question	Answer
ConstructConnect	Is there an engineer's estimate or budget/range for this project?	Engineer's estimate is \$71,327.46
Emerald Construction Corp DBA Neucor Construction	Is there an engineer's estimate for this project?	Please refer to response for question 1



ITB No. 319

TITLE: GTL-WWTP Pre-Treatment Building Improvements

ADDENDUM NO.1

DATE: 08/07/2024

This addendum is being issued to Add Anti-Human Trafficking Affidavit and Section 22.13 Anti-Human Trafficking Language to the Sample Agreement.

All other terms, conditions and specifications remain unchanged.

Paulette Hemmings Turner

Snr. Purchasing Specialist

Company Name: _____

(Please print)

Bidder's Signature: _____

Date: _____

ANTI-HUMAN TRAFFICKING AFFIDAVIT

The undersigned, on behalf of _____, a _____ (State) _____ (Type of Entity), (“Nongovernmental Entity”), under penalty of perjury, hereby deposes and says:

- 1. My name is _____.
- 2. I am an officer or authorized representative of the Nongovernmental Entity.
- 3. I attest that the Nongovernmental Entity does not use coercion for labor or services as defined in Section 787.06, Florida Statutes (2023), as may be amended or revised.

Under penalties of perjury, I declare I have read the foregoing Affidavit and that the facts stated are true.

Name of Officer: _____ Title: _____

Signature of Officer: _____

Office Address: _____

Email Address: _____ Main Phone Number: _____

FEIN No. _/_ - _/_/_/_/_/_/_

OR

Name of Representative: _____ Title: _____

Signature of Representative: _____

Office Address: _____

Email Address: _____ Main Phone Number: _____

FEIN No. _/_ - _/_/_/_/_/_/_

CITY OF FORT LAUDERDALE
CONSTRUCTION AGREEMENT

THIS Agreement made and entered into this _____ day of _____, 2024, by and between the City of Fort Lauderdale, a Florida municipal corporation ("City") and _____, a Florida company/corporation ("Contractor"), ("Party" or collectively "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 – Advertisement for Invitation to Bids, the Instructions to Bidders, the Bid Form (with supplemental affidavits and sample 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 written document executed by both Parties ordering a change in the Contract Price or Contract Time or a material change in the Work.
- 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, 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, 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 amount established in the bid submittal and award by the City’s City Commission, as may be amended by Change Order.
- 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 – 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.
- 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-workdays 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 condition’s precedent enumerated therein, within the time specified that the City will sign and deliver this Agreement.
- 1.23 Notice to Proceed – A written notice to Contractor authorizing the commencement of the activities identified in the notice or as described in the Contract Documents.
- 1.24 Plans - The official graphic representations of this Project that are a part of 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 construction project described in the Contract Documents, including the

Work described therein.

- 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 a Professional Engineer, or a Professional Land Surveyor licensed in the State of Florida and employed by the Contractor at no cost to the City.
- 1.31 Substantially Completed Date – A date when written notice is provided by the City to the Contractor stating that the Work is substantially completed. If, at the time of inspection, it is determined the project is substantially completed, the City will also issue a letter of Substantial Completion along with a punch list of incomplete or deficient items to be completed prior to requesting a Final Completion inspection.
- 1.32 Work – The construction and services required by the Contract Documents, whether completed or partially completed, and includes all labor, materials, equipment, and services provided or to be provided by Contractor to fulfill Contractor's obligations. The Work may constitute the whole or a part of the Project.

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:

GTL-WWTP PRE-TREATMENT BUILDING IMPROVEMENTS ITB 319 PROJECT P12170

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

PROJECT DESCRIPTION

Project is located at George T. Lohmeyer Regional (GTL) Waste Water Treatment Plant (WWTP) Pre-Treatment Building, in the City of Fort Lauderdale. The work to be accomplished under this contract includes, but is not limited to, the restoration of concrete spalling, encompassing tasks such as the removal and repair of unsound concrete, alongside cleaning

reinforcement where corrosion is below 20% and replacing it where corrosion exceeds this threshold. Areas targeted for rehabilitation include, but are not restricted to, essential structural elements like columns, beams, walls, and slabs. The methodology will adhere to industry standards to ensure structural integrity and longevity, while rigorous quality assurance measures will be implemented to verify the effectiveness of repairs.

- 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 all personnel employed. 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 Ana Ziegler, whose address is 101 NE 3rd Avenue Suite 2100, Fort Lauderdale 33301, telephone number: (954) 828-5817, and email address is Aziegler@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 incorporated herein and attached to this Agreement, and consist of the following:

- 4.1 This Agreement.
- 4.2 Exhibits to this Agreement: (Plans sheets [1] to [10] inclusive).
- 4.3 Public Construction Bond, Performance Bond, Payment Bond and Certificates of Insurance.
- 4.4 Notice of Award and Notice to Proceed.
- 4.5 General Conditions and Special Conditions.
- 4.6 Technical Specifications.
- 4.7 Plans/Drawings.
- 4.8 Addenda number _____ through _____, inclusive.
- 4.9 Bid Form and supplement Affidavits and Agreements.
- 4.10 All applicable provisions of State and Federal Law.
- 4.11 Invitation to Bid No. 319, Instructions to Bidders, and Bid Bond.

- 4.12 Contractor's response to the City's Invitation to Bid No.319, dated _____.
- 4.13 Schedule of Completion.
- 4.14 All amendments, modifications and supplements, change orders and work directive changes, issued on or after the Effective Date of the Agreement.
- 4.15 Any additional documents that are required to be submitted under the Agreement.
- 4.16 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.

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

- a. Approved change orders, addenda or amendments.
- b. Specifications and Drawings.
- c. Special Conditions.
- d. General Conditions.
- e. This Agreement dated _____, and any attachments.
- f. Invitation to Bid No. 319, and the specifications prepared by the City.
- g. Contractor's response to the City's Invitation to Bid No. 319, dated _____.
- h. Schedule of Values.
- i. 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, within five (5) calendar days, and before proceeding with the Work affected shall obtain a written interpretation or clarification from the City.

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 7 calendar days of the date of the Notice to Proceed.
- 5.2 The Work shall be Substantially Completed within 180 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 200 calendar days after 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 items 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 for 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 (1st) and the tenth (10th) 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-five percent (95%) 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 five percent (5%) 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 (2023), as amended or revised, provided, however, complete and error free pay application is submitted.
- 7.7 The City shall make payment to the Contractor through utilization of the City's Purchasing Card (P-Card) Program. The City has implemented a P-Card Program utilizing the MASTERCARD and VISA networks. Purchases from this contract will be made utilizing the City's P-Card. Contractor will receive payment from the purchasing card in the same manner as other credit card purchases. Accordingly, Contractor 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. All costs associated with the Contractor's participation in this purchasing program shall be borne by the Contractor. The City reserves the right to revise this program as necessary.
- 7.8 Payment Card Industry (PCI) Compliance Contractor agrees to comply with all applicable state, federal and international laws, as well as industry best practices, governing the collection, access, use, disclosure, safeguarding and destruction of Protected Information.

Contractor and/or any subcontractor that handles credit card data must be, and remain, PCI compliant under the current standards and will provide documentation confirming compliance upon request by the City of Fort Lauderdale. Failure to produce documentation could result in termination of the contract.

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, water table condition, moisture conditions and all year-round local weather and climate conditions (past and present), and 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 within the Contract Time as defined in this Agreement.

Furthermore, Contractor warrants and confirms that it 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 on its own, 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 Bid Price and that the Project can be completed for the Bid 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 it 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 it 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 Agreement in accordance with Article 17.

8.8.4 Where required and necessary, the Contractor shall, at all times, have a certified "competent person" assigned to the job site. The Contractor shall assign personnel to the job site that have successfully completed training programs related to trench safety, confined space work, and maintenance of traffic (MOT). Personnel certified by the International Municipal Signal Associations with Florida Department of Transportation qualifications are required relative to MOT. Any other certifications that may be required by applicable permitting agencies for the Work shall also be complied with by the Contractor. Failure to pursue the Work with the properly certified supervisory staff may result in notice to stop work or terminate the Agreement 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 materials 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 8 a.m. and 5:00 p.m., Monday through Friday.

Unless approved by the City in advance, the Contractor will not perform 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. For any overtime inspection required by City personnel, 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., Monday through Friday, and any work requiring inspection oversight being performed outside of this timeframe shall be paid for by the Contractor as Inspector overtime at a rate of \$100.00 per hour.** 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 itself to indemnify and hold 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 bids. 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 in conflict, the Contractor shall give the Project Manager prompt written notice thereof within five (5) calendar days, 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, standards, specifications and regulations, and without such notice to the Project Manager, the Contractor shall bear all costs arising therefrom.

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, and the 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 its 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 properties and areas 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 accumulation 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.
 - 8.16.6 Coordination with and scheduling of all required inspections from all permitting agencies.
- 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 entities 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. Section 9607, as amended or revised, 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 it 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 purpose, such acts or circumstances shall include, but not be limited to weather conditions affecting performance, floods, epidemics, pandemics, war, act of Governmental Authority, state of emergency, 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 ninety-six (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 it, the sub-recipient or its subcontractors shall not discriminate on the basis of race, color, national origin, or sex in the performance of this Agreement. 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 Agreement, which may result in the termination of this Agreement 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 shall provide public rights-of-way and easement, where available, for the installation of conduits, transformers pads and related appurtenances only.
- 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.

- 9.5 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 Agreement into a subsequent fiscal period is subject to appropriation of funds, unless otherwise authorized by law.

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: 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 (2022), 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.

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.

- 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: As a condition precedent to the effectiveness of this Agreement, during the term of this Agreement and during any renewal or extension term of this Agreement, Contractor shall cause at its sole expense, to provide insurance of such types and with such terms and limits as noted below. Providing proof of and maintaining adequate insurance coverage are material obligations of Contractor. Contractor shall provide the City a certificate of insurance evidencing such coverage. Contractor’s insurance coverage shall be primary insurance for all applicable

policies, in respect to the City's interests. The limits of coverage under each policy maintained by Contractor shall not be interpreted as limiting Contractor's liability and obligations under this Agreement. All insurance policies shall be through insurers authorized or eligible to write policies in the State of Florida and possess an A.M. Best rating of A-, VII or better, subject to approval by the City's Risk Manager.

The coverages, limits, and/or endorsements required herein protect the interests of the City, and these coverages, limits, and/or endorsements shall in no way be relied upon by Contractor for assessing the extent or determining appropriate types and limits of coverage to protect Contractor against any loss exposures, whether as a result of this Agreement or otherwise. The requirements contained herein, as well as the City's review or acknowledgement, are not intended to and shall not in any manner limit or qualify the liabilities and obligations assumed by Contractor under this Agreement.

The following insurance policies and coverages are required:

Commercial General Liability

Coverage must be afforded under a Commercial General Liability policy with limits not less than:

- \$1,000,000 each occurrence and \$2,000,000 aggregate for Bodily Injury, Property Damage, and Personal and Advertising Injury
- \$1,000,000 each occurrence and \$2,000,000 aggregate for Products and Completed Operations
- Policy must include coverage for contractual liability and independent contractors.

The City, a Florida municipality, its officials, employees, and volunteers are to be included as an additional insured with a CG 20 26 04 13 Additional Insured – Designated Person or Organization Endorsement or similar endorsement providing equal or broader Additional Insured Coverage with respect to liability arising out of activities performed by or on behalf of Contractor. The coverage shall contain no special limitation on the scope of protection afforded to the City, its officials, employees, and volunteers.

Business Automobile Liability

Coverage must be afforded for all Owned, Hired, Scheduled, and Non-Owned vehicles for Bodily Injury and Property Damage in an amount not less than \$1,000,000 combined single limit each accident.

If Contractor does not own vehicles, Contractor shall maintain coverage for Hired and Non-Owned Auto Liability, which may be satisfied by way of endorsement to the Commercial General Liability policy or separate Business Auto Liability policy.

Workers' Compensation and Employer's Liability

Coverage must be afforded per Chapter 440, Florida Statutes. Any person or entity performing work for or on behalf of the City must provide Workers' Compensation insurance. Exceptions and exemptions will be allowed by the City's Risk Manager, if they are in accordance with Florida Statute.

Contractor waives, and Contractor shall ensure that Contractor's insurance carrier waives, all subrogation rights against the City, its officials, employees, and volunteers for all losses or damages. The City requires the policy to be endorsed with WC 00 03 13 Waiver of our Right to Recover from Others or equivalent.

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

Insurance Certificate Requirements

- a) Contractor shall provide the City with valid Certificates of Insurance (binders are unacceptable) no later than ten (10) days prior to the start of work contemplated in this Agreement.
- b) Contractor shall provide to the City a Certificate of Insurance having a thirty (30) day notice of cancellation; ten (10) days' notice if cancellation is for nonpayment of premium.
- c) In the event that the insurer is unable to accommodate the cancellation notice requirement, it shall be the responsibility of Contractor to provide the proper notice. Such notification will be in writing by registered mail, return receipt requested, and addressed to the certificate holder.
- d) In the event the Agreement term or any surviving obligation of Contractor following expiration or early termination of the Agreement goes beyond the expiration date of the insurance policy, Contractor shall provide the City with an updated Certificate of Insurance no later than ten (10) days prior to the expiration of the insurance currently in effect. The City reserves the right to suspend the Agreement until this requirement is met.
- e) The Certificate of Insurance shall indicate whether coverage is provided under a claims-made or occurrence form. If any coverage is provided on a claims-made form, the Certificate of Insurance must show a retroactive date, which shall be the effective date of the initial contract or prior.
- f) The City shall be included as an Additional Insured on all liability policies, with the exception of Workers' Compensation.
- g) The City shall be granted a Waiver of Subrogation on Contractor's Workers' Compensation insurance policy.
- h) The title of the Agreement, Bid/Contract number, event dates, or other identifying reference must be listed on the Certificate of Insurance.

The Certificate Holder should read as follows:

City of Fort Lauderdale
401 SE 21st Street
Fort Lauderdale, FL 33316

Contractor has the sole responsibility for all insurance premiums and shall be fully and solely responsible for any costs or expenses as a result of a coverage deductible, co-insurance penalty, or self-insured retention; including any loss not covered because of the application of such deductible, co-insurance penalty, self-insured retention, or coverage exclusion or limitation. Any costs for adding the City as an Additional Insured shall be at Contractor's expense.

If Contractor's primary insurance policy/policies do not meet the minimum requirements as set forth in this Agreement, Contractor may provide evidence of an Umbrella/Excess insurance policy to comply with this requirement.

Contractor's insurance coverage shall be primary insurance in respect to the City's interests, a Florida municipality, its officials, employees, and volunteers. Any insurance or self-insurance maintained by the City shall be non-contributory.

Any exclusion or provision in any insurance policy maintained by Contractor that excludes coverage required in this Agreement shall be deemed unacceptable and shall be considered breach of contract.

All required insurance policies must be maintained until the Agreement work has been accepted by the City, or until this Agreement is terminated, whichever is later. Any lapse in coverage may be considered breach of contract. In addition, Contractor must provide to the City confirmation of coverage renewal via an updated certificate of insurance should any policies expire prior to the expiration of this Agreement. The City reserves the right to review, at any time, coverage forms and limits of Contractor's insurance policies.

Contractor shall provide notice of any and all claims, accidents, and any other occurrences associated with this Agreement to Contractor's insurance company or companies and the City's Risk Management office as soon as practical.

It is Contractor's responsibility to ensure that any and all of Contractor's independent contractors and subcontractors comply with these insurance requirements. All coverages for independent contractors and subcontractors shall be subject to all of the applicable requirements stated herein. Any and all deficiencies are the responsibility of Contractor. The City reserves the right to adjust insurance limits from time to time at its discretion with notice to Contractor.

NOTE: CITY PROJECT NUMBER, PROJECT NAME AND BID NUMBER MUST APPEAR ON EACH CERTIFICATE, AND THE CITY OF FORT LAUDERDALE MUST BE NAMED ON THE CERTIFICATE AS AN "ADDITIONAL INSURED" ON REQUIRED LIABILITY POLICIES.

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 Project Manager 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 Paragraphs 11.2.1 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 it 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 Contract's 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, suppliers, employees or laborers; (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, 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 (2023), as may be amended or revised, 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 fully executed 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 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 an approved and fully executed 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.

ARTICLE 15 – CHANGE OF THE CONTRACT TIME

15.1 The Contract Time may only be changed by an approved and fully executed 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 therefore 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, pandemics, act of Governmental Authority, state of emergency, 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 Agreement, 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 (\$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 makes a general assignment for the benefit of creditors.
 - 17.2.2 If a trustee, receiver, custodian or agent of the Contractor is appointed under applicable law or under Agreement, 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.
 - 17.2.3 If Contractor fails to begin the Work within fifteen (15) calendar days after the date set forth in the Notice to Proceed, 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.
 - 17.2.4 If the Contractor repeatedly fails to make prompt payments to subcontractors or for labor, material or equipment.
 - 17.2.5 If the Contractor repeatedly disregards proper safety procedures.
 - 17.2.6 If the Contractor disregards any local, state or federal laws or regulations.
 - 17.2.7 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 notice 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 below in Section 17.5.

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 Contractor 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 Contractor 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 Contractor 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 Agreement 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 accepted by the City and costs reasonably incurred by Contractor relating to commitments which had become firm prior to the termination. No payment shall be made for profit for work/services which have not been performed or accepted.

17.6 Where the Contractor's service has 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 City Project Manager and Contractor shall be submitted to the City Manager or his designee and Contractor's representative for resolution. Prior to any litigation being commenced, for any disputes which remain unresolved, within sixty (60) days after final completion of the Work, the Parties shall participate in mediation to address all unresolved disputes to a mediator agreed upon by the Parties. Should any objection not be resolved in mediation, the Parties retain all their legal rights and remedies provided under the laws of Florida. Failure by a Party to comply in strict accordance with the requirements of this Article, then said Party specifically waives all of its rights provided hereunder, including its rights and remedies under the laws of Florida.

- 18.1.1 All non-technical administrative disputes (such as billing and payment) shall be determined by Contract Administrator.
- 18.1.2 During the pendency of any dispute and after a determination thereof, Contractor 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.
- 18.1.3 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:

Project Manager
City of Fort Lauderdale

Fort Lauderdale, Florida 33301-1016
Telephone: (954) 828-_____
E-mail: _____

with copies to:

City Manager

and

City Attorney

City of Fort Lauderdale
401 SE 21st Street
Fort Lauderdale, FL 33316

City of Fort Lauderdale
1 East Broward Blvd, Suite 1605
Fort Lauderdale, FL 33301-1016

To the Contractor:

Telephone: _____
E-mail: _____

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 (2023), as may be amended or revised, or to extend the City’s liability beyond the limits established in said Section 768.28, Florida Statutes (2023), as may be amended or revised; 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; WAIVER OF JURY TRIAL

- 21.1 The Agreement shall be interpreted and construed in accordance with, and governed by, the laws of the state of Florida. The Parties agree that the exclusive venue for any lawsuit arising from, related to, or in connection with this Agreement shall be in the state courts of the Seventeenth Judicial Circuit in and for Broward County, Florida. If any

claims arising from, related to, or in connection with this Agreement must be litigated in federal court, the Parties agree that the exclusive venue for any such lawsuit shall be in the United States District Court or United States Bankruptcy Court for the Southern District of Florida. **BY ENTERING INTO THIS AGREEMENT, THE PARTIES HEREBY EXPRESSLY WAIVE ANY AND ALL RIGHTS EITHER PARTY MIGHT HAVE TO A TRIAL BY JURY OF ANY ISSUES RELATED TO THIS AGREEMENT. IF A PARTY FAILS TO WITHDRAW A REQUEST FOR A JURY TRIAL IN A LAWSUIT ARISING OUT OF THIS AGREEMENT AFTER WRITTEN NOTICE BY THE OTHER PARTY OF VIOLATION OF THIS SECTION, THE PARTY MAKING THE REQUEST FOR JURY TRIAL SHALL BE LIABLE FOR THE REASONABLE ATTORNEYS' FEES AND COSTS OF THE OTHER PARTY IN CONTESTING THE REQUEST FOR JURY TRIAL, AND SUCH AMOUNTS SHALL BE AWARDED BY THE COURT IN ADJUDICATING THE MOTION.**

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 as independent contractor 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

The Contractor certifies that it is not on the Scrutinized Companies that Boycott Israel List created pursuant to Section 215.4725, Florida Statutes (2023), and that it is not engaged in a boycott of Israel. 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 (2023), as may be amended or revised, or been placed on the Scrutinized Companies that Boycott Israel List created pursuant to Section 215.4725, Florida Statutes (2023), as may be amended or revised, or is engaged in a boycott of Israel.

22.8 Public Entity Crimes: In accordance with the Public Crimes Act, Section 287.133, Florida Statutes (2023), as may be amended or revised, 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 (2023), as may be amended or revised, 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 Contractor 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 (2023), TO THE CONTRACTOR'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS AGREEMENT, CONTACT THE CUSTODIAN OF PUBLIC RECORDS AT PRRCONTRACT@FORTLAUDERDALE.GOV, 954-828-5002, CITY CLERK'S OFFICE, 1 EAST BROWARD BOULEVARD, SUITE 444 FORT LAUDERDALE, FLORIDA 33301.

Contractor shall:

1. Keep and maintain public records 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 (2023), 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 Agreement if the Contractor does not transfer the records to the City.
4. Upon completion of the Agreement, 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 Agreement, 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 Agreement, 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.

22.11 Non-Discrimination

The Contractor shall not discriminate against its employees based on the employee's race, color, religion, gender, gender identity, gender expression, marital status, sexual orientation, national origin, age, disability, or any other protected classification as defined by applicable law.

1. The Contractor certifies and represents that the Contractor offers the same health benefits to the domestic partners of its employees as are offered its employees' spouses or offers its employees the cash equivalent of such health benefits because it is unable to provide health benefits to its employees' domestic partners, and that the Contractor will comply with Section 2-187, Code of Ordinances of the City of Fort Lauderdale, Florida, as may be amended or revised, ("Section 2-187"), during the entire term of this Agreement.
2. The failure of the Contractor to comply with Section 2-187 shall be deemed to be a material breach of this Agreement, entitling the City to pursue any remedy stated below or any remedy provided under applicable law.
3. The City may terminate this Agreement if the Contractor fails to comply with Section 2-187.
4. The City may retain all monies due or to become due until the Contractor complies with Section 2-187.
5. The Contractor may be subject to debarment or suspension proceedings. Such proceedings will be consistent with the procedures in Section 2-183 of the Code of Ordinances of the City of Fort Lauderdale, Florida.

22.12 E-Verify

As a condition precedent to the effectiveness of this Agreement, pursuant to Section 448.095, Florida Statutes (2023), as may be amended or revised, the Contractor and its subcontractors shall register with and use the E-Verify system to electronically verify the employment eligibility of newly hired employees.

1. The Contractor shall require each of its subcontractors, if any, to provide the Contractor with an affidavit stating that the subcontractor does not employ, contract with, or subcontract with an unauthorized alien. The Contractor shall maintain a copy of the subcontractor's affidavit for the duration of this Agreement and in accordance with the public records requirements of this Agreement.

2. The City, the Contractor, or any subcontractor who has a good faith belief that a person or entity with which it is contracting has knowingly violated Subsection 448.09(1), Florida Statutes (2023), as may be amended or revised, shall terminate the contract with the person or entity.

3. The City, upon good faith belief that a subcontractor knowingly violated the provisions of Subsection 448.095(5), Florida Statutes (2023), as may be amended or revised, but that the Contractor otherwise complied with Subsection 448.095(5), Florida Statutes (2023), as may be amended or revised, shall promptly notify Contractor and order the Contractor to immediately terminate the contract with the subcontractor, and the Contractor shall comply with such order.

4. A contract terminated under Subparagraph 448.095(5)(c)1. or 2., Florida Statutes (2023), as may be amended or revised, is not a breach of contract and may not be considered as such. If the City terminates this contract under Paragraph 448.095(5)(c), Florida Statutes (2023), as may be amended or revised, the Contractor may not be awarded a public contract for at least one year after the date on which the contract was terminated. The Contractor is liable for any additional costs incurred by the City as a result of termination of this Agreement.

5. Contractor shall include in each of its subcontracts, if any, the requirements set forth in this Section, including this subparagraph, requiring any and all subcontractors, as defined in Subsection 448.095(1)(e), Florida Statutes (2023), as may be amended or revised, to include all of the requirements of this Section in their subcontracts. Contractor shall be responsible for compliance by any and all subcontractors, as defined in Subsection 448.095(1)(e), Florida Statutes (2023), as may be amended or revised, with the requirements of Section 448.095, Florida Statutes (2023), as may be amended or revised.

22.13 ANTI-HUMAN TRAFFICKING

As a condition precedent to the effectiveness of this Agreement, the Contractor shall provide the City with an affidavit signed by an officer or a representative of the Contractor under penalty of perjury attesting that the Contractor does not use coercion for labor or service as defined in Section 787.06, Florida Statutes (2023), as may be amended or revised.

[THIS SPACE WAS INTENTIONALLY LEFT BLANK]

CITY

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

CITY OF FORT LAUDERDALE, a Florida municipal corporation

By: _____
SUSAN GRANT
Acting City Manager

Date: _____

ATTEST:

By: _____
DAVID R. SOLOMAN
City Clerk

Approved as to Legal Form and correctness:
Thomas J. Ansbro, City Attorney

By: _____
Assistant City Attorney

SAMPLE AGREEMENT

CONTRACTOR

WITNESSES:

CONTRACTOR.,
a Florida company/corporation.

By: _____

Print Name: _____

Print Name

Title: _____

ATTEST:

Print Name

By: _____

Secretary

(CORPORATE SEAL)

STATE OF _____:

COUNTY OF _____:

The foregoing instrument was acknowledged before me by means of physical presence or online notarization, this _____ day of _____, 2024, by _____, (NAME OF AUTHORIZED OFFICER) as _____ (TITLE OF AUTHORIZED OFFICER), for _____ (NAME OF COMPANY), a Florida _____ (TYPE OF COMPANY).

(Signature of Notary Public - State of Florida)

(Print, Type, or Stamp Commissioned Name of Notary Public)

Personally Known _____ OR Produced Identification _____
Type of Identification Produced: _____



ITB No. 319

TITLE: GTL-WWTP Pre-Treatment Building Improvements

ADDENDUM NO.2

DATE: 08/23/2024

This addendum is being issued to:

- Extend Bid Close Date to – 8/23/2024
- Extend Q & A Date to – 8/13/2024

All other terms, conditions and specifications remain unchanged.

Paulette Hemmings Turner
Snr. Purchasing Specialist

Company Name: _____
(Please print)

Bidder's Signature: _____

Date: _____