



Invitation for Bids

IFB-057-23-JJ

**McKinley Street Interceptor Ventilation & Tyler Street Conflict
Box Revision
ESSD Project Number 7111**

**FOR THE
CITY OF HOLLYWOOD, FLORIDA (CITY)**

IFB Issue Date: March 2, 2023
Questions Due Date: March 22, 2023
Submittal Due Date: March 29, 2023, at 3:00 p.m. ET

CITY OF HOLLYWOOD

IFB 057-23-JJ

McKinley Street Interceptor Ventilation & Tyler Street Conflict Box Revision
ESSD Project Number 7111

TABLE OF CONTENTS

<u>SECTION I – INTRODUCTION</u>	<u>SECTION III – SCOPE OF SERVICES</u>
1.1 Purpose	3.1 Project Description
1.2 Pre-bid Conference	3.2 Technical Specifications
1.3 OpenGov	3.3 Contractor Qualifications
1.4 Point of Contact	3.4 Subcontractors
1.5 Cone of Silence	3.5 Deliverables and Objectives
<u>SECTION II – SPECIAL TERMS AND CONDITIONS</u>	3.6 Project Schedule / Timeline
2.1 Addenda, Changes, and Interpretations	3.7 Questions
2.2 Dimensions, Quantities and Subsurface Information	3.8 Substantial Completion
2.3 Trench Safety Form	<u>SECTION IV – GENERAL TERMS & CONDITIONS</u>
2.4 Changes and Alterations	<u>SECTION V – FORM(S)</u>
2.5 Bidder’s Costs	Form 1 Submittal Checklist Form*
2.6 Pricing/Delivery	Form 2 Acknowledgement and Signature Page
2.7 Price Validity	Form 3 Bid Form*
2.8 No Exclusive Contract	Form 4 Vendor Reference Form
2.9 Responsive	Form 5 Hold Harmless and Indemnity Clause
2.10 Responsible	Form 6 Non-Collusion Affidavit
2.11 Minimum Qualifications	Form 7 Sworn Statement...Public Entity Crimes
2.12 Award of Contract	Form 8 Certifications Regarding Debarment...
2.13 Execution Of Contract:	Form 9 Drug-Free Workplace Program
2.14 Failure To Execute Contract, Bid Guaranty Forfeited	Form 10 Solicitation, Giving, and Acceptance...
2.15 Manufacturer/Brand/Model Request	Form 11 W-9 (Request for Taxpayer Identification)
2.16 Permits and Fees	Form 12 Trench Safety Form*
2.17 Contract Security	Form 13 Bid Guaranty Form
2.18 Contract Period	Form 14 List of Subcontractors
2.19 Bid Guaranty	Form 15 Information Required from Bidders
2.20 Warranties of Usage	Form 16 Proposal
2.21 Rules and Submittals of Bids	<u>SECTION VI – ATTACHMENTS/EXHIBITS</u>
2.22 Tie Breaker	Attachment A – Contract Documents, Payment, and Performance Bond
2.23 Conflict of Interests Prohibited	Attachment B – General Conditions, Public Utilities
2.24 Protest Procedure	Attachment C - Supplementary General Conditions
2.25 Insurance Requirements	Attachment D – Technical Specifications
2.26 Uncontrollable Circumstances (Force Majeure)	Attachment E – Drawings
2.27 Supplier Portal (Oracle) Payment Method	
2.28 Debarred or Suspended Bidders or Proposers	
2.29 Payment and Performance Bond	
2.30 Public Records	

SECTION I – INTRODUCTION

1.1 **Purpose**

The City of Hollywood, Florida (City) is seeking bids from qualified and experienced firms, hereinafter referred to as the Contractor or Bidder, to provide construction services for the City, in accordance with the terms, conditions, and specifications contained in this solicitation. Responses to this solicitation are due by **March 29, 2023, by 3:00 PM EST**, and will be opened in a virtual public setting on **March 29, 2023, at 3:00 PM EST** at <https://Opengov.com/>.

Submittals shall be received electronically through www.OpenGov.com.

Submittals shall be considered an offer on the part of the bidder, which offer shall be deemed accepted upon approval of the City, and in case of default, the City reserves the right to accept or reject any or all bids/proposals, to waive irregularities and technicalities, and request new bids/proposals. The City also reserves the right to award any resulting agreement as it deems will best serve the interests of the city.

1.2 **Pre-bid Conference and/or Site Visit**

There will not be a pre-bid conference or site visit for this solicitation.

It will be the sole responsibility of the Bidder to become familiar with the scope of the City's requirements 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 themselves with the nature and extent of the work, equipment, materials, and labor required.

1.3 **OpenGov**

The City of Hollywood uses OpenGov (www.opengov.com) to administer the competitive solicitation process, including but not limited to soliciting bids, issuing addenda, posting results and issuing notification of an intended decision.

The City shall not be responsible for a Bidders inability to submit a bid by the bid end date and time for any reason, including issues arising from the use of OpenGov.

1.4 **Point of Contact**

For information concerning procedures for responding to this solicitation, contact the Point of Contact within the Office of Procurement Services, Jean Joinville, Senior Purchasing Agent at jjoinville@hollywoodfl.org or by phone at (954) 921-3290, or Staci Alli, Office Assistant I at salli@hollywoodfl.org or by phone at 954-921-3222. Such contact is to be for clarification purposes only. All questions must be submitted in writing via OpenGov by **March 22, 2023, by 5:00 PM EST** in order to receive a response.

Project Manager: Donnelly Chin, Department of Public Utilities, email: dchin@hollywoodfl.org or by phone: (954) 921-3930.

For information concerning technical specifications, please utilize the question / answer feature provided by OpenGov at www.opengov.com. Questions of a material nature must be received prior to the cut-off date specified in the solicitation schedule. Material changes, if any, to the scope of services or bidding procedures will only be transmitted by written addendum. (See addendum section of OpenGov Site). 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 themselves with the nature and extent of the work, and the equipment, materials, and labor required. The entire bid response must be submitted in accordance with all

specifications contained in this solicitation. The questions and answers submitted in OpenGov shall become part of any contract that is created from this solicitation.

It is the sole responsibility of the Bidder to ensure that their bid is submitted electronically through OpenGov at www.opengov.com.

1.5 Cone of Silence

The City of Hollywood City Commission adopted Ordinance No. O-2007-05, which created Section 30.15(F) imposing a Cone of Silence for certain City purchases of goods and Services.

The Cone of Silence refers to limits on communications held between vendors and vendor's representatives and City elected officials, management and staff during the period in which a Formal Solicitation is open.

The Ordinance does allow potential vendors or vendor's representatives to communicate with designated employees for the limited purpose of seeking clarification or additional information. The names and contact information of those employees that may be contacted for clarification or additional information are included in the solicitation.

The Cone of Silence does not prohibit a vendor or vendor's representative from communicating verbally, or in writing with the City Manager, the City Manager's designee, the City Attorney or the City Attorney's designee on those procurement items to be considered by the City Commission.

The Cone of Silence does not prohibit a vendor or vendor's representative from making public presentations at a duly noticed pre-bid conference or duly noticed evaluation committee meeting or from communicating with the City Commission during a duly noticed public meeting.

The Cone of Silence shall be imposed when a formal competitive solicitation has been issued and shall remain in effect until an award is made, a contract is approved, or the City Commission takes any other action which ends the solicitation.

To view the Cone of Silence, go to the City of Hollywood Code of Ordinance online, and view [Section 30.15F](#).

All communications regarding this bid should be sent in writing to the Procurement Services Division as identified in this bid.

END OF SECTION

SECTION II - SPECIAL TERMS AND CONDITIONS

2.1 Addenda, Changes, and Interpretations

It is the sole responsibility of each firm to notify the Point of Contact utilizing the question / answer feature provided by OpenGov and request modification or clarification of any ambiguity, conflict, discrepancy, omission or other error discovered in this competitive solicitation. Requests for clarification, modification, interpretation, or changes must be received prior to the Question and Answer (Q & A) Deadline. Requests received after this date may not be addressed. Questions and requests for information that would not materially affect the scope of services to be performed or the solicitation process will be answered within the question / answer feature provided by OpenGov and shall be for clarification purposes only. Material changes, if any, to the scope of services or the solicitation process will only be transmitted by official written addendum issued by the City and uploaded to OpenGov as a separate addendum to the solicitation. Under no circumstances shall an oral explanation given by any City official, officer, staff, or agent be binding upon the City and should be disregarded. All addenda are a part of the competitive solicitation documents and each firm will be bound by such addenda. It is the responsibility of each to read and comprehend all addenda issued.

2.2 Dimensions, Quantities and Subsurface Information

Dimensions, quantities, and subsurface information supplied by the City are in no way warranted to indicate true amounts or conditions. Bidders/Contractors shall neither plead misunderstanding or deception nor make claims against the City if the actual amounts, conditions, or dimensions do not conform to those stated. Any "Outside" reports made available by the Engineer are neither guaranteed as to accuracy or completeness, nor a part of the Contract Documents.

2.3 Trench Safety Form

The Trench Safety Form included in the Bid Documents must be completed and signed. Noncompliance with this requirement may invalidate the bid.

2.4 Changes and Alterations

Bidder may change or withdraw a Bid at any time prior to Bid submission deadline; however, no oral modifications will be allowed. Modifications shall not be allowed following the Bid deadline.

2.5 Bidder's Costs

The City shall not be liable for any costs incurred by Bidders in responding to this solicitation.

2.6 Pricing/Delivery

All pricing must include delivery and installation and be quoted FOB: Destination, unless specified otherwise in Section III.

2.7 Price Validity

Prices provided in this solicitation shall be valid for at least One-Hundred and Twenty (120) days from time of solicitation opening unless otherwise extended and agreed upon by the City and Bidder.

2.8 No Exclusive Contract

Bidder agrees and understands that the contract shall not be construed as an exclusive arrangement and further agrees that the City may, at any time, secure similar or identical services from another vendor at the City's sole option.

2.9 Responsive

In order to be considered responsive to the solicitation, the firm's bid shall fully conform in all material respects to the solicitation and all of its requirements, including all form and substance.

2.10 **Responsible**

In order to be considered as a responsible firm, firm shall be fully capable to meet all of the requirements of the solicitation and subsequent contract, must possess the full capability, including financial and technical, to perform as contractually required, and must be able to fully document the ability to provide good faith performance.

2.11 **Minimum Qualifications**

To be eligible for award of a contract in response to this solicitation, the Bidder must demonstrate that they have successfully completed services, as specified in Section III of this solicitation, are normally and routinely engaged in performing such services, and are properly and legally licensed (if required) to perform such work. Bidder must possess, and be able to provide the City with any and all required Federal, State, County and/or municipal licenses, and occupational licenses. Bidder must be able to provide proof of valid licensing for all subcontractors and/or material suppliers hired by the contractor, if requested. In addition, the Bidder must have no conflict of interest with regard to any other work performed by the Bidder for the City.

2.12 **Award of Contract**

Award may be in the aggregate, or by line Item, or by group, whichever is determined to be in the best interest of the City.

The Contract will be awarded only to a Bidder, who in the opinion of the **Engineer**, is fully qualified to undertake the work, quoting the lowest price, for that product/service that will best serve the needs of the City. The City reserves the right before awarding the Contract to require a Bidder to submit such evidence of his qualifications as it may deem necessary and may consider any available evidence of his financial status, technical qualifications, and other qualifications and abilities.

The City also 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.

2.13 **Execution Of Contract**

The Bidder to whom the Contract is awarded shall, within ten days of the date of award, execute and deliver three (3) copies of the following to the Engineer.

- A. The Contract
- B. Performance and Payment Bond
- C. Evidence of required Insurance
- D. Proof of authority to execute the Contract
- E. Proof of authority to execute the Bond on behalf of the Awardee
- F. List of Subcontractors, estimated Contract Value for each and proof that such subcontractors possess all required Federal, State, County and/or municipality licenses, including but not limited to certified of competency and occupational license

The above documents must be furnished, executed and delivered before the Contract will be executed by the City. The Contract shall not be binding upon the City until it has been executed by the City and a copy of such fully executed Contract is delivered to the Contractor.

2.14 Failure To Execute Contract, Bid Guaranty Forfeited

Should the Bidder to whom the Contract has been awarded refuse or fail to complete the requirements of Section 2.13 above within ten (10) days after Notice of Award, the additional time in days (including weekends) required to CORRECTLY complete the documents will be deducted, in equal amount, from the Contract Time, or the City may elect to revoke the Award. The Bid Guaranty of any Bidder failing to execute the awarded Contract shall be retained by the City and the Contract awarded as the Commission desires.

2.15 Manufacturer/Brand/Model Specific Request

This is a manufacturer/brand/model specification. No substitutions will be allowed unless specified in Form 3 or Attachment D, – Technical Specifications.

2.16 Permits and Fees Refer to Attachment D – Technical Specifications (Section 01025 Basis of Payment)

2.17 Contract Security

When the awarded bidder delivers the executed contract to the City, it must be accompanied by the required bonds.

2.18 Contract Period

The initial contract term shall commence upon date of award by the City for a 270-day term. In the event services are scheduled to end because of the expiration of this contract, the Contractor shall continue the service upon the request of the City as authorized by the awarding authority. The extension period shall not extend for more than 120 days beyond the expiration date of the existing contract. The Contractor shall be compensated for the service at the rate in effect when this extension clause is invoked by the City.

2.19 Bid Guaranty

A Bid Guaranty in the form of a Cashier's Check, Certified Check or Bid Bond executed by the Bidder and a qualified Surety in the amount of 5% of the Bid is required for this project.

2.20 Warranties of Usage

Any estimated quantities listed are for information and tabulation purposes only. No warranty or guarantee of quantities needed is given or implied. It is understood that the Contractor will furnish the City's needs as they arise.

2.21 Rules and Submittals of Bids

The signer of the bid must declare that the only person(s), company or parties interested in the proposal as principals are named therein; that the bid is made without collusion with any other person(s), company or parties submitting a bid; that it is in all respects fair and in good faith, without collusion or fraud; and that the signer of the bid has full authority to bind the principal bidder.

2.22 Tie Breaker

In cases where there is a tie for the bid award, the award shall be made by giving preference to the low bidder(s) with the following items (in this order): (1) maintenance of a drug-free workplace in accordance with the requirements of Florida Statutes Section 287.087, (2) local Hollywood vendor preference, (3) closest proximity/location to project site or City Hall, and/or (4) minority-owned or disadvantaged business status. If a tie still exists after the aforementioned tiebreakers are utilized, the Chief Procurement Officer will make a recommendation for award among the tied bidders.

2.23 Conflict of Interests Prohibited

Any respondent submitting a response to this solicitation is responsible for being aware of, and complying with [Section 34.02](#) of the City Code of Ordinances. If you have questions concerning whether you may or may not need to comply with the ordinance, please contact the City of Hollywood, City Clerk's Office at 954-921-3211.

2.24 Protest Procedure

Any respondent who is not recommended for award of a contract and who alleges a failure by the City to follow the City's [Procurement Code](#) or any applicable law may protest to the CPO, by delivering a letter of protest to the CPO in accordance with [Section 38.52](#) of the City's [Procurement Code](#) within five days after a notice of intent to award is posted on the City's web site, OpenGov, City Clerk's Office, Open Government, and/or City's Sunshine Board (<https://www.hollywoodfl.org/Archive.aspx?AMID=140>).

2.25 Insurance Requirements

Contractor shall maintain, at its sole expense, during the term of this agreement the following insurances:

The insurance required by Article 5.6 of the General Conditions shall be as follows:

Any Sub-Contractor used by the contractor shall supply such similar insurance required of the contractor. Such certificates shall name the City of Hollywood and Hazen and Sawyer as an Additional Insured.

A. **BUILDERS RISK (BR 1) - Installation Floater: (Not Applicable)**

B. **GENERAL LIABILITY (GL3):**

Prior to the commencement of work governed by this contract, the Contractor shall obtain General Liability Insurance. Coverage shall be maintained throughout the life of the contract and include, as a minimum:

- 1 **Premises Operations**
- 2 **Products and Completed Operations**
- 3 **Blanket Contractual Liability**
- 4 **Personal Injury Liability**
- 5 **Expanded Definition of Property Damage**

The minimum limits acceptable shall be:

- \$2,000,000 Combined Single Limit (CSL)

If split limits are provided, the minimum limits acceptable shall be:

- \$1,000,000 per Person
- \$2,000,000 per Occurrence
- \$100,000 Property Damage

An Occurrence Form policy is preferred. If coverage is provided on a Claims Made policy, its provisions should include coverage for claims filed on or after the effective date of this contract. In addition, the

period for which claims may be reported should extend for a minimum of twelve (12) months following the acceptance of work by the City.

The City of Hollywood shall be named as Additional Insured on all policies issued to satisfy the above requirements.

C. GENERAL LIABILITY (GLXCU):

Recognizing that the work governed by this contract involves either underground exposures, explosive activities, or the possibility of collapse of a structure, the Contractor's General Liability Policy shall include coverage for the XCU (explosion, collapse, and underground) exposures with limits of liability equal to those of the General Liability Insurance policy.

D. VEHICLE LIABILITY (VL3):

Recognizing that the work governed by this contract requires the use of vehicles, the Contractor, prior to the commencement of work, shall obtain Vehicle Liability Insurance. Coverage shall be maintained throughout the life of the contract and include, as a minimum, liability coverage for:

- Owned, Non-Owned, and Hired Vehicles

The minimum limits acceptable shall be:

- \$1,000,000 Combined Single Limit (CSL)

If split limits are provided, the minimum limits acceptable shall be:

- \$500,000 per Person
- \$1,000,000 per Occurrence
- \$100,000 Property Damage

The City of Hollywood shall be named as Additional Insured on all policies issued to satisfy the above requirements.

E. WORKERS' COMPENSATION (WC2):

Prior to the commencement of work governed by this contract, the Contractor shall obtain Workers' Compensation Insurance with limits sufficient to respond to the applicable state statutes.

In addition, the Contractor shall obtain Employers' Liability Insurance with limits of not less than:

- \$500,000 Bodily Injury by Accident
- \$500,000 Bodily Injury by Disease, policy limits
- \$500,000 Bodily Injury by Disease, each employee

Coverage shall be maintained throughout the entire term of the contract.

F. POLLUTION LIABILITY INSURANCE

The minimum limits of liability shall be:

- \$1,000,000 per each claim / \$2,000,000 aggregate

Coverage shall be provided by a company or companies authorized to transact business in the state of Florida and the company or companies must maintain a minimum rating of "A" and Class X, as assigned by the A.M. Best Company.

The policy must be endorsed to provide the City with (30) days' notice of cancellation.

If the Contractor has been approved by the Florida's Department of Labor, as an authorized self-insurer, the City shall recognize and honor the Contractor's status. The Contractor may be required to submit a Letter of Authorization issued by the Department of Labor and a Certificate of Insurance, providing details on the Contractor's Excess Insurance Program.

If the Contractor participates in a self-insurance fund, a Certificate of Insurance will be required. In addition, the Contractor may be required to submit updated financial statements from the fund upon request from the City.

Any sub-consultant shall supply such similar insurance required of the Consultant. Such certificates shall name the City as additional insured in the general liability and auto liability policies.

2.26 Uncontrollable Circumstances (Force Majeure)

The City and Contractor will be excused from the performance of their respective obligations under this agreement when and to the extent that their performance is delayed or prevented by any circumstances beyond their control including, fire, flood, explosion, strikes or other labor disputes, acts of God or public emergency, war, riot, civil commotion, malicious damage, act or omission of any governmental authority, delay or failure or shortage of any type of transportation, equipment, or service from a public utility needed for their performance, provided that:

2.26.1 The non performing party gives the other party prompt written notice describing the particulars of the Force Majeure including, but not limited to, the nature of the occurrence and its expected duration, and continues to furnish timely reports with respect thereto during the period of the Force Majeure;

2.26.2 The excuse of performance is of no greater scope and of no longer duration than is required by the Force Majeure; and

2.26.3 No obligations of either party that arose before the Force Majeure causing the excuse of performance are excused as a result of the Force Majeure; and

2.26.4 The non-performing party uses its best efforts to remedy its inability to perform. Notwithstanding the above, performance shall not be excused under this Section for a period in excess of two (2) months, provided that in extenuating circumstances, the City may excuse performance for a longer term. Economic hardship of the Contractor will not constitute Force Majeure. The term of the agreement shall be extended by a period equal to that during which either party's performance is suspended under this Section.

2.27 Supplier Portal (Oracle) Payment Method

The City has implemented software that contains a supplier portal allowing suppliers to submit and update their information via the supplier portal. New suppliers will be required to register; and current suppliers will need to confirm and update their information.

Firms are responsible for ensuring that all contact, payment, and general information is updated at all times, and will not hold the City liable for any inaccurate information.

2.28 Debarred or Suspended Bidders or Proposers

Firm(s) 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, state, county or municipal department or agency.

2.29 Payment and Performance Bond

A Performance Bond and a Payment Bond each equal to 100 percent of the total Bid will be required of the Awardee. The Bond must be written through a company licensed to do business in the State of Florida and be rated at least "A", Class X, in the latest edition of "Best's Key Rating Guide", published by A.M. Best Company. As per Florida Statute Section 255.05, the Contractor shall be required to record the payment and performance bonds in the public records of Broward County

2.30 Public Records

A. Public Records/Trade Secrets/Copyright:

All responses will become the property of the City. The Consultant's response to the solicitation is a public record pursuant to Florida law and is subject to disclosure by the City pursuant to Chapter 119.07, Florida Statutes ("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, Florida Statutes.

Any language contained in the Consultant's response to the solicitation purporting to require confidentiality of any portion of the Consultant'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 Consultant submits any documents or other information to the City that the Consultant claims is Trade Secret information and exempt from Florida Statutes Chapter 119.07 ("Public Records Laws"), the Consultant shall clearly designate that it is a Trade Secret and that it is asserting that the document or information is exempt. The Consultant 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 Consultant's response to the solicitation constitutes a Trade Secret. The City's determination of whether an exemption applies shall be final, and the Consultant 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 the event of Contract award, all documentation produced as part of the Contract shall become the exclusive property of the City. Proposals purporting to be subject to copyright protection in full or in part will be rejected.

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

B. PUBLIC RECORDS GENERAL

IF THE CONSULTANT HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO THE CONSULTANT'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS CONTRACT, CONTACT THE CUSTODIAN OF PUBLIC RECORDS AT: (954-921-3211), pcerny@hollywoodfl.org, CITY CLERK'S OFFICE, 2600 HOLLYWOOD BLVD, HOLLYWOOD, FLORIDA 33020)

Consultant shall:

1. Keep and maintain public records that ordinarily and necessarily would be required by the City in order to perform the service.
2. Upon request from the City's custodian of public records, provide the City with a copy of the requested records or allow the records to be inspected or copied within a reasonable time at a cost that does not exceed the cost provided in Chapter 119, Florida Statutes.
3. Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law for the duration of the contract term and following completion of this contract if the Consultant does not transfer the records to the City.
4. Upon completion of the Contract, transfer, at no cost, to the City all public records in possession of the Consultant or keep and maintain public records required by the City to perform the service. If the Consultant transfers all public records to the City upon completion of this Contract, the Consultant shall destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. If the Consultant keeps and maintains public records upon completion of this Contract, the Consultant shall meet all applicable requirements for retaining public records. All records stored electronically must be provided to the City, upon request from the City's custodian of public records, in a format that is compatible with the information technology systems of the City. It is solely and exclusively the Contractor's responsibility to familiarize itself with Chapter 119, Florida Statutes, and to ensure compliance with its requirements.

END OF SECTION

SECTION III - SCOPE OF SERVICES

3.1 Project Description

Work under this Contract consists of civil, sitework, mechanical, structural, and all related work necessary for the installation of a vent pipe at each of Manhole Nos. 6 and 10 along McKinley Street and the removal and replacement of Four (4) manhole frames and covers and vent pipe installation at the Conflict Box at Tyler Street and 13th Ave. Work includes excavation, coring of manholes, installation of vent pipes, reinforced concrete pedestals, stand pipes, associated valves, sidewalk removal and replacement, backfill, asphalt and driveway repairs and other work as required in the Contract Documents.

The Contractor agrees to cooperate and work with **[ALL ADDITIONAL DEPARTMENTS THAT MAY REQUIRE COORDINATION]**.

3.2 Technical Specifications

Refer to Appendix D.

3.3 Contractor Qualifications

The contract will be awarded only to a responsive contractor qualified by experience to do the Work specified. The bidder shall submit, prior to award of contract, satisfactory evidence of his experience in like Work and that he is fully prepared with the necessary organization, capital, equipment and machinery to complete the Work to the satisfaction of the City within the time limit stated. In addition to the above, the Contractor shall satisfy the following criteria:

[Hold a current Florida Underground Utility Contractor License]

Form 15 – Information Required from Bidders, shall be completed fully and accurately by the Contractor and submitted with the bid. Information included on the questionnaire will be used in evaluating the qualifications of the Contractor. The City reserves the right to request additional information not identified on the questionnaire.

3.4 Subcontractors

For the City to be assured that only competent and qualified subcontractors will be employed on this project, each Bidder shall submit in the bid a list of the subcontractors performing work on this project. This subcontractors list shall include each firm's name, address, telephone number, contact person and work to be performed. Subcontractors shall be properly registered or licensed with the State of Florida, Broward County and the City of Hollywood. Subcontractors shall, in the City's opinion, be qualified both technically and financially to perform the work.

The City reserves the right to reject any subcontractor who is deemed by the City to be unacceptable technically or financially, or has previously performed work which the City believes to be unsatisfactory. No change may be made to this list of subcontractors by the Contractor, before or after contract award, without the express written consent of the City.

If, prior to award, the City rejects any subcontractor, the Contractor shall be afforded the opportunity to submit qualifications for an alternate subcontractor with no attendant increase in the base lump sum bid amount, adjustment of contract time or alteration of the bid documents. Such qualifications will be due within ten (10) days of receipt of notification of subcontractor rejection. Failure to submit an acceptable alternate subcontractor may result in rejection of the bid. In this event, the bid bond shall be returned to Contractor without claim by the City and with forfeiture of all claim rights by the Contractor.

- 3.5 **Deliverables and Objectives**
Refer to Attachment B General Conditions, Attachment C Supplementary General Conditions, Attachment D Technical Specifications and Attachment E Drawings.
- 3.6 **Project Schedule / Timeline**
Refer to Appendix C, Supplementary conditions, Section 1, Project Schedule.
- 3.7 **Questions**
Refer to Form 15, Information Required from Bidders.
- 3.8 **Substantial Completion**
Refer to Appendix C, Supplementary conditions, Section 1, Project Schedule.

END OF SECTION

SECTION IV – GENERAL TERMS AND CONDITIONS

1.1 INTENT

It is the policy of the City to encourage full and open competition among all available qualified vendors. All vendors regularly engaged in the type of Work specified in the Bid Solicitation are encouraged to submit bids. To receive notification and to be eligible to bid vendor should be registered with OpenGov. Vendors may register with the OpenGov (registration is free) to be included on a mailing list for selected categories of goods and Services. In order to be processed for payment, any awarded vendor must register with the City by completing and returning a Vendor Application and all supporting documents. For information and to apply as a vendor, please visit our website at hollywoodfl.org to download an application and submit it to Procurement Services Division.

It is the intent of the City of Hollywood, FL ("the City"), through this solicitation and the contract conditions contained herein, to establish to the greatest possible extent complete clarity regarding the requirements of both parties to the agreement resulting from this solicitation.

Before submitting a bid, the Vendor shall be thoroughly familiarized with all contract conditions referred to in this document and any addenda issued before the bid/proposal submission date. Such addenda shall form a part of the SOLICITATION and shall be made a part of the contract. It shall be the Vendor's responsibility to ascertain that the bid/proposal includes all addenda issued prior to the bid/proposal submission date. Addenda will be posted on the City's internet site along with the SOLICITATION.

The terms of the SOLICITATION and the selected Vendor's bid and any additional documentation (e.g. questions and answers) provided by the Vendor during the solicitation process will be integrated into the final contract for services entered into between the City and the selected Vendor. The Vendor shall determine, by personal examination and by such other means as may be preferred, the conditions and requirements under which the agreement must be performed.

1.2 PROPOSER'S RESPONSIBILITIES

Proposers are required to submit their bids upon the following express conditions:

- A. Proposers shall thoroughly examine the drawings, specifications, schedules, instructions and all other contract documents.
- B. Proposers shall make all investigations necessary to thoroughly inform themselves regarding delivery of material, equipment or services as required by the SOLICITATION conditions. No plea of ignorance, by the proposer, of conditions that exist or that may hereafter exist as a result of failure or omission on the part of the proposer to make the necessary examinations and investigations, or failure to fulfill in every detail the requirements of the contract documents, will be accepted as a basis for varying the requirements of the City or the compensation due the proposer.
- C. Proposers are advised that all City contracts are subject to all legal requirements provided for in the City of Hollywood Charter, Code of Ordinances and applicable County Ordinances, State Statutes and Federal Statutes.

1.3 PREPARATION OF BIDS/PROPOSALS

Bids/proposals shall be prepared in accordance with the bid/proposal response format. Bids/proposals not complying with this format may be considered non-responsive and may be removed from consideration on this basis. Each proposer, by making a bid/proposal, represents that this document has been read and is fully understood.

Bids/proposals will be prepared in accordance with the following:

- A. The City's enclosed bid/proposal Forms, in their entirety, are to be used in submitting your bid/proposal. **NO OTHER FORM WILL BE ACCEPTED.**
- B. All information required by the bid/proposal form shall be furnished. The proposer shall sign each continuation sheet (where indicated) on which an entry is made.

C. Prices shall be shown and where there is an error in extension of prices, the unit price shall govern.

The City of Hollywood is exempt from payment to its vendors of State of Florida sales tax and, therefore, such taxes should not be figured into the SOLICITATION. However, this exemption does not apply to suppliers to the City in their (supplier) purchases of goods or services, used in work or goods supplied to the City. Proposers are responsible for any taxes, sales or otherwise, levied on their purchases, subcontracts, employment, etc. An exemption certificate will be signed where applicable, upon request. The City will pay no sales tax.

1.4 DESCRIPTION OF SUPPLIES (As Applicable)

Any manufacturer's names, trade names, brand names, or catalog numbers used in these applications are for the purpose of describing and establishing minimum requirements or level of quality, standards of performance, and design required, and are in no way intended to prohibit the bidding of other manufacturers' items of equal material, unless specifications state "NO SUBSTITUTIONS."

Proposers must indicate any variances to the specifications, terms, and conditions, no matter how slight. If variations are not stated in the bid/proposal, it shall be construed that the bid/proposal fully complies with the Specifications, Terms and Conditions.

Proposers are required to state exactly what they intend to furnish; otherwise they shall be required to furnish the items as specified.

Proposers will submit, with their bid/proposal, necessary data (factory information sheets, specifications, brochures, etc.) to evaluate and determine the quality of the item(s) they are proposing.

The City shall be the sole judge of equality and its decision shall be final.

1.5 ADDENDA

The Procurement Services Division may issue an addendum in response to any inquiry received, prior to bid/proposal opening, which changes, adds to or clarifies the terms, provisions or requirements of the solicitation. The Proposer should not rely on any representation, statement or explanation, whether written or verbal, other than those made in this solicitation document or in any addenda issued. Where there appears to be a conflict between this solicitation and any addendum, the last addendum issued shall prevail. It is the proposer's responsibility to ensure receipt of all addenda and any accompanying documents. Proposer(s) shall acknowledge receipt of any formal Addenda by signing the addendum and including it with their bid/proposal. Failure to include signed formal addenda in its bid/proposal shall cause the City to deem the bid/proposal non-responsive provided, however, that the City may waive this requirement in its best interest.

1.6 REJECTION OF BIDS/PROPOSALS

To the extent permitted by applicable state and federal laws and regulations, the City reserves the right to reject any and all bids/proposals, to waive any and all informalities, irregularities and technicalities not involving price, time or changes in the commodities and/or services, and the right to disregard all nonconforming, non-responsive, unbalanced or conditional bids/proposals. Bids/proposals will be considered irregular and may be rejected if they show serious omissions, alterations in form, additions not called for, conditions or unauthorized alterations or irregularities of any kind.

The City also reserves the right to waive minor technical defects in a bid/proposal. The City reserves the right to determine, in its sole discretion, whether any aspect of a bid/proposal satisfies the criteria established in this Solicitation.

The City reserves the right to reject, in whole or in part, the bid/proposal of any Proposer if the City believes that it would not be in the best interest of the City to make an award to that Proposer, whether because the bid/proposal is not responsive or the Proposer is unqualified or of doubtful financial ability or fails to meet any other pertinent standard or criterion established by City.

The foregoing reasons for rejection of bids/proposals are not intended to be exhaustive.

The City may reject a bid/proposal if:

A. The Proposer fails to acknowledge receipt of an addendum, or if

- B. The Proposer misstates or conceals any material fact in the bid/proposal, or if
- C. The bid/proposal does not strictly conform to the law or requirements of the SOLICITATION, or if
- D. The City is under a pre- lawsuit claim or current litigation with the proposer.

Additionally, any one of the following causes (not limited to) may be considered as sufficient justification to disqualify a Bidder and reject his/her Bid:

- A. Submission of more than one Bid for the same work by an individual, firm, partnership or corporation under the same or different names.
- B. Evidence of collusion.
- C. Previous participation in collusive Bidding on work for the City of Hollywood, Florida.
- D. Submission of an unbalanced Bid in which the prices Bid for some items are out of proportion to the prices Bid for other items.
- E. Lack of competency. The Engineer may declare any Bidder ineligible, at any time during the process or receiving Bids or awarding the Contract, if developments arise which, in his opinion, adversely affects the Bidder's responsibility. The Bidder will be given an opportunity, by the Engineer, to present additional evidence before final action is taken.
- F. Lack of responsibility as shown by past work judged by the Engineer from the standpoint of workmanship and progress.
- G. Uncompleted work for which the Bidder is committed by Contract, which is in the judgment of the Engineer, might hinder or prevent the prompt completion of work under this Contract

The City may reject all bids whenever it is deemed in the best interest of the City to do so, and may reject any part of a bid unless the bid has been qualified as provided in herein.

1.7 WITHDRAWAL OF BIDS

- A. Bids may not be withdrawn and shall be deemed enforceable for a period of 180 days after the time set for the SOLICITATION opening.
- B. Bids may be withdrawn prior to the time set for the SOLICITATION opening. Such request must be in writing.
- C. The City will permanently retain as liquidated damages and the bid deposit furnished by any Bidder who requests to withdraw a bid after the SOLICITATION opening.

1.8 BIDS TO REMAIN OPEN

All bids shall remain open for 180 calendar days after the day of the bid opening, but the City may, at its sole discretion, release any bid and return the bid Security prior to that date.

Extensions of time when bids shall remain open beyond the 180 day period may be made only by mutual written agreement between the City, the successful Bidder and the surety, if any, for the successful Bidder.

1.9 LATE BIDS OR MODIFICATIONS

Only bids received as of the opening date and time will be considered timely. Bids and modifications received after the time set for the opening will be returned un-opened to the sender and rejected as late.

1.10 CONFLICTS WITHIN THE SOLICITATION

Where there appears to be a conflict between the General Terms and Conditions, Special Conditions, the Technical Specifications, the SOLICITATION Submittal Section, or any addendum issued, the order of precedence shall be the last addendum issued, the SOLICITATION Submittal Section, the Technical Specifications, the Special Conditions, and then the General Terms and Conditions.

1.11 CLARIFICATION OR OBJECTION TO BID SPECIFICATIONS

If any person contemplating submitting a bid for this contract is in doubt as to the true meaning of the specifications or other SOLICITATION documents or any part thereof, they may submit requests for clarification to the Procurement Services Division on or before the date specified for a request for clarification. All such requests for clarification shall be made in writing and the person submitting the request will be responsible for its prompt delivery. Any interpretation of the SOLICITATION, if made, will be made only by Addendum duly issued. A copy of such Addendum will be made available to each person receiving a Solicitation. The City will not be responsible for any other explanation or interpretation of the SOLICITATION given prior to the award of the contract. Any objection to the specifications and requirements as set forth in this SOLICITATION must be filed in writing with the Chief Procurement Officer on or before the date specified for a request for clarification.

1.12 COMPETENCY OF PROPOSERS

Pre-award inspection of the Bidder's facility may be made prior to the award of a contract. Bids will be considered only from firms which are regularly engaged in the business of providing the goods and/or services as described in this SOLICITATION(s); have a record of performance for a reasonable period of time; and have sufficient financial support, equipment and organization to ensure that they can satisfactorily deliver the material and/or services if awarded a Contract under the terms and conditions herein stated. The terms "equipment and organization" as used herein shall be construed to mean a fully equipped and well established company in line with the best business practices in the industry and as determined by the proper authorities of the City.

The City may consider any evidence available to it of the financial, technical and other qualifications and abilities of a proposer, including past performance (experience) in making the award in the best interest of the City. In all cases the City of Hollywood shall have no liability to any proposer for any costs or expense incurred in connection with this SOLICITATION or otherwise.

1.13 QUALIFICATIONS OF PROPOSERS

No Bid will be accepted from, nor will any contract be awarded to any person who is in arrears to the City upon any debt or contract, or who is a defaulter, as surety or otherwise, upon any obligation to City, or who is deemed responsible or unreliable by the City.

As part of the bid evaluation process, City may conduct a background investigation including a record check by the Hollywood Police Department. Proposer's submission of a bid constitutes acknowledgment of the process and consent to such investigation. City shall be the sole judge in determining a Bidder's qualifications.

1.14 CONSIDERATION OF BIDS

In cases where an item requested is identified by a manufacturer's name, trade name, catalog number, or reference, it is understood that the Vendor proposes to furnish the item so identified and does not propose to furnish an "equal" unless the proposed "equal" is pre-approved by the City.

References to any of the above are intended to be descriptive but not restrictive and only indicate articles that will be satisfactory. A bid of an "equal" will be considered, provided that the Vendor states in his bid exactly what he proposes to furnish, including sample, illustration, or other descriptive matter which will clearly indicate the character of the article covered by such bid. The designated City representative hereby reserves the right to approve as an "equal", or to reject as not being an "equal", any article proposed which contains major or minor variations from specifications requirements.

1.15 AWARD OF CONTRACT

If the Contract is to be awarded, it will be awarded, after evaluation by the City, to the responsible and responsive Proposer whom the City determines will be in the best interests of the City and not necessarily to the lowest cost Proposer. Proposers may be invited to an oral interview before the committee. A short list of finalists will be determined and presented to either the City Manager or his/her designee or to the City Commission, in accordance with the applicable City of Hollywood Code of Ordinances, and will make the final ranking for the purposes of negotiating a contract with the top ranked firm. The successful Proposer shall be required to sign a negotiated contract; the refusal or failure of a successful Proposer to execute a contract which contains the mandatory material terms and conditions contained in the SOLICITATION, shall be grounds for deeming the Proposer and/or the Proposer's bid/proposal non-responsive.

If applicable, the Proposer to whom award is made shall execute a written contract prior to award by the City Commission. If the Proposer to whom the first award is made fails to enter into a contract as herein provided, the Contract may be let to the next highest ranked Proposer who is responsible and responsive in the opinion of the City.

1.16 BASIS FOR AWARD, EVALUATION CRITERIA AND QUESTIONS

The qualification of bid/proposal responders on this project will be considered in making the award. The City is not obligated to accept any bid/proposal if deemed not in the best interest of the City to do so. The City shall make award to a qualified proposer based on fees submitted and responses to this SOLICITATION.

Failure to include in the bid all information outlined herein may be cause for rejection of the bid.

The City reserves the right to accept or reject any and all bids, in whole or in part, as determined to be in the best interest of the City in its sole discretion.

The City reserves the right to waive any informalities or irregularities in bids.

The City reserves the right to negotiate separately the terms and conditions or all or any part of the bids as deemed to be in the City's best interest in its sole discretion.

Information and/or factors gathered during interviews, negotiations and any reference checks, and any other information or factors deemed relevant by the City, shall be utilized in the final award. The final award of a contract is subject to approval by the City Commission.

1.17 AGREEMENT

An agreement shall be sent to the awarded proposer to be signed, witnessed, and returned to the City for execution. The City will provide a copy of the fully executed agreement to the awarded proposer.

1.18 NOTICE TO PROCEED

A signed purchase order, blanket purchase order or fully executed agreement will be the Proposer's authorization to proceed and may substitute for a "Notice to Proceed" form.

1.19 BID PROTESTS

The City shall provide notice of its intent to award or reject to all Proposers by posting such notice on the City's website.

After a notice of intent to award a contract is posted, any actual or prospective proposer who is aggrieved in connection with the pending award of the contract or any element of the process leading to the award of the contract may protest to the Director of Procurement Services. A protest must be filed within five business days after posting or any right to protest is forfeited. The protest must be in writing, must identify the name and address of the protester, and must include a factual summary of, and the basis for, the protest. Filing shall be considered complete when the protest, including a deposit, is received by the Procurement Services Division. Failure to file a protest within the time-frame specified herein shall constitute a full waiver of all rights to protest the City's decision regarding the award.

The written protest shall state in detail the specific facts and law or ordinance upon which the protest of the proposed award is based, and shall include all pertinent documents.

A written protest may not challenge the relative weight of evaluation criteria or a formula for assigning points.

Upon receipt of a formal written protest, the City shall stop award proceedings until resolution of the protest; unless it has been determined that the award of the contract without delay is necessary to protect substantial interests of the City.

Any and all costs incurred by a protesting party in connection with a bid protest shall be the sole responsibility of the protesting party.

Upon receipt of a protest of the pending award of a contract, a copy of the protest shall promptly be forwarded to the City Attorney. The City Attorney shall thereupon review the charge to determine its sufficiency, including whether the protest was timely filed. If upon review the City Attorney determines that the charge is insufficient, the City Attorney may issue a

summary dismissal of the protest. If upon review the City Attorney determines that the charge is sufficient, a hearing of the protest committee shall be scheduled.

A protest committee shall have the authority to review, settle and resolve the protest. The committee shall consist of three members appointed by the City Manager. The committee's review shall be informal.

If the protest committee determines that the pending award of a contract or any element of the process leading to the award involved a significant violation of law or applicable rule or regulation, all steps necessary and proper to correct the violation shall be taken. If the committee determines that the protest is without merit,

The Director shall promptly issue a decision in writing stating the reason for the decision and furnish a copy to the protester and any other interested party, and the process leading to the award shall proceed.

1.20 REQUIREMENTS FOR SIGNING BIDS/PROPOSALS

Requirements for Signing Bid/Proposal:

- A. The bid/proposal must be signed in ink by an individual authorized to legally bind the person, partnership, company, or corporation submitting the bid/proposal. In cases where the bid/proposal is signed by a deputy or subordinate, the principal's proper written grant of authority to such deputy or subordinate must accompany the bid/proposal.
- B. Bids/proposals by corporations must be executed in the corporate name by the President or other corporate officers accompanied by evidence of authority to sign. The corporate address and state of incorporation must be shown below the signature.
- C. Bids/proposals by partnerships must be executed in the partnership name and signed by a general partner whose title must appear under the signature and the official address of the partnership must be shown below the signature.
- D. All manual signatures must have the name typed directly under the line of the signature
- E. The above requirements apply to all SOLICITATION addenda.

1.21 EXAMINATION OF BID DOCUMENTS

Before submitting a bid, each Bidder must: examine the bid Documents thoroughly; consider federal, state and local laws, ordinances, rules and regulations that may in any manner affect cost, progress, performance, or provision of the commodities and/or services; study and carefully correlate Proposer's observations with the bid Documents, and notify the City's agent of all conflicts, errors and discrepancies in the bid Documents.

The submission of a bid/proposal will constitute an incontrovertible representation by the Bidder, that the Bidder has complied with every requirement of this SOLICITATION, that without exception, the bid is premised upon performing the services and/or furnishing the commodities and materials in accordance with such means, methods, techniques, sequences or procedures as may be indicated in or required by the bid/proposal Documents, and that the bid Documents are sufficient in scope and detail to indicate and convey understanding of all terms and conditions of performance and furnishing of the goods and/or services.

1.22 PUBLIC RECORDS LAW

If applicable, for each public agency contract for services, the Proposer is required to comply with F.S. 119.0701, which includes the following:

- A. Keep and maintain public records that ordinarily and necessarily would be required by the public agency in order to perform the service.
- B. Provide the public with access to public records on the same terms and conditions that the public agency would provide the records and at a cost that does not exceed the cost provided in F.S. Chapter 119 or as otherwise provided by law.

- C. Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law.
- D. Meet all requirements for retaining public records and transfer, at no cost, to the public agency, all public records in possession of the proposer upon termination of the contract and destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. All records stored electronically must be provided to the public agency in a format that is compatible with the information technology systems of the public agency.

Public records may be inspected and examined by anyone desiring to do so, at a reasonable time, under reasonable conditions, and under supervision by the custodian of the public record. Sealed Bids become subject to the public records disclosure requirements of F.S. Chapter 119, notwithstanding a proposers' request to the contrary, at the time the City provides notice of a decision or intended decision, or 30 days after the bid/proposal opening, whichever is earlier.

Financial statements submitted in response to a request by the City may be confidential and exempt from disclosure.

Data processing software obtained under a licensing agreement which prohibits its disclosure may also exempt.

Proposers are hereby notified and agree that all information submitted as part of, or in support of SOLICITATION submittals will be available for public inspection after opening of SOLICITATION in compliance with Chapter 119 of the Florida Statutes. The proposer shall not, unless required as part of this SOLICITATION, submit any information in response to this invitation which the proposer considers to be a trade secret, proprietary or confidential. The submission, not required as part of this this SOLICITATION, of any information to the City in connection with this invitation shall be deemed conclusively to be a waiver of any trade secret or other protection, which would otherwise be available to the proposer.

1.23 INFORMATION

For information concerning procedure for responding to this Solicitation (SOLICITATION), contact the Point of Contact in the Section 1.4. Such contact shall be for clarification purposes only. **It is preferred that all other questions be submitted in writing via OpenGov at least 10 calendar days prior to the bid/proposal due/opening date.**

1.24 N/A – INTENTIONALLY OMITTED

1.25 MODIFICATION AND WITHDRAWAL OF BIDS/PROPOSALS

Bids must be modified or withdrawn by an appropriate document duly executed in the manner that a bid must be executed and delivered to the place where bids are to be submitted at any time prior to the deadline for submitting bids. A request for withdrawal or a modification must be in writing and signed by a person duly authorized to do so and, in a case where signed by a deputy or subordinate, the principal's proper written grant of authority to such deputy or subordinate must accompany the request for withdrawal or modification. Withdrawal of a bid will not prejudice the rights of a Bidder to submit a new bid prior to the bid date and time. Except where provided in the following paragraph no bid may be withdrawn or modified after expiration of the period for receiving bids.

If, within twenty-four (24) hours after bids are opened, any Bidder files a duly signed written notice with the City and within five (5) calendar days thereafter demonstrates to the reasonable satisfaction of the City by clear and convincing evidence that there was a material and substantial mistake in the preparation of its bid, or that the mistake is clearly evident on the face of the bid but the intended correct bid is not similarly evident, then the Bidder may withdraw its bid and the bid Security will be returned.

1.26 N/A – INTENTIONALLY OMITTED

1.27 OPEN END CONTRACT

No guarantee is expressed or implied as to the total quantity of commodities/services to be purchased under any open end contract. Estimated quantities will be used for bid comparison purposes only. The City reserves the right to issue purchase orders as and when required, or a blanket purchase order and release partial quantities as and when required or any combination of the preceding.

ORDERING: The CITY reserves the right to purchase commodities/services specified herein through Contracts established by other governmental agencies or through separate procurement actions due to unique or special needs. If an urgent

delivery is required within a period shorter than the delivery time specified in the contract, and if the seller is unable to comply therewith, the City reserves the right to obtain such delivery from others without penalty or prejudice to the City or to the Bidder.

1.28 AUDIT RIGHTS

The City reserves the right to audit the records of the successful Bidder for the commodities and/or services provided under the Contract at any time during the performance and term of the Contract and for a period of three (3) years after completion and acceptance by the City. If required by the City, the successful Bidder agrees to submit to an audit by an independent certified public accountant selected by the City. The successful Bidder shall allow the City to inspect, examine and review the records of the successful Bidder in relation to this contract at any and all times during normal business hours during the term of the Contract.

1.29 LOCAL, STATE AND FEDERAL COMPLIANCE REQUIREMENTS

The Bidder shall comply with all local, state and federal directives, orders and laws as applicable to this SOLICITATION and subsequent contract(s) including, but not limited to:

- A. Equal Employment Opportunity (EEO), in compliance with Executive Order 11246 as amended and applicable to this contract.
- B. All manufactured items and fabricated assemblies shall comply with applicable requirements of the Occupation Safety and Health Act of 1970 as amended, and be in compliance with Chapter 442, Florida Statutes. Any toxic substance listed in Section 38F-41.03 of the Florida Administrative Code delivered as a result of this order must be accompanied by a completed Material Safety Data Sheet (MSDS).
- C. The Immigration and Nationality Act prohibits (i) the employment of an unauthorized alien when the employer knows the individual is an unauthorized alien and (ii) the employment of an individual without complying with the requirements of the federal employment verification system. If a proposer commits either of these violations, such violation shall be cause for unilateral cancellation of the contract.
- D. This Section applies only to any contract for goods or services of \$1 million or more: The Proposer 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 (2011), as may be amended or revised. The City may terminate this Contract at the City's option if the Proposer is found to have submitted a false certification as provided under subsection (5) of section 287.135, Florida Statutes (2011), 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 has engaged in business operations in Cuba or Syria, as defined in Section 287.135, Florida Statutes (2011), as may be amended or revised.

1.30 FRAUD AND MISREPRESENTATION

Any individual, corporation or other entity that attempts to meet its contractual obligations with the City through fraud, misrepresentation or material misstatement, may be debarred from doing business with the City. The City as further sanction may terminate or cancel any other contracts with such individual, corporation or entity. Such individual or entity shall be responsible for all direct or indirect costs associated with termination or cancellation, including attorney's fees.

1.31 DEBARRED OR SUSPENDED BIDDERS

The bidder certifies, by submission of a response to this solicitation, that neither it nor its principals and sub bidder are presently debarred or suspended by any Federal department or agency.

1.32 COLLUSION

More than one bid/proposal received for the same work from an individual, firm, partnership, corporation or association under the same or different names will not be considered. Reasonable grounds for believing that any Bidder is interested in more than one bid for the same work will cause the rejection of such bid which the Bidder is interested. If there are reasonable grounds for believing that collusion exists among the Bidder, the bids of participants in such collusion will not be considered.

1.33 COPELAND "ANTI-KICKBACK"

The Bidder and all sub bidders will comply with the Copeland Anti-Kickback Act (18 U.S.C. 874) as supplemented in Department of Labor regulations (29 CFR Part 3).

1.34 FORCE MAJEURE

The Agreement which is awarded to the successful proposer may provide that the performance of any act by the City or Bidder hereunder may be delayed or suspended at any time while, but only so long as, either party is hindered in or prevented from performance by acts of God, the elements, war, rebellion, strikes, lockouts or any cause beyond the reasonable control of such party, provided however, the City shall have the right to provide substitute service from third parties or City forces and in such event the City shall withhold payment due the Bidder for such period of time. If the condition of force majeure exceeds a period of 14 days the City may, at its option and discretion, cancel or renegotiate this Agreement.

1.35 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 Bidder, supplier, sub bidder, 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 Florida Statutes, Section 287.017, for CATEGORY TWO for a period of 36 months from the date of being placed on the convicted vendor list.

1.36 DRUG-FREE WORKPLACE PROGRAM

Preference shall be given to businesses with drug-free workplace programs. Whenever two or more bids which are equal with respect to price, quality, and service are received by the State or by any political subdivision for the procurement of commodities or contractual services, a bid received from a business that certifies that it has implemented a drug-free workplace program shall be given preference in the award process. Established procedures for processing tie bids will be followed if none of the tied vendors have a drug-free workplace program.

1.37 SOLICITATION, GIVING, AND ACCEPTANCE OF GIFTS POLICY

Bidder shall sign and submit the attached form indicating understanding and compliance with the City's and State's policies prohibiting solicitation and acceptance of gifts by public officers, employees and candidates. Failure to submit the signed form will result in your bid being declared non-responsive; provided, however, that a responsible Bidder whose bid would be responsive but for the failure to submit the signed form in its bid may be given the opportunity to submit the form to the City within five calendar days after notification by the City, if this is determined to be in the best interest of the City.

1.38 CONFLICT OF INTEREST

The Bidder represents that:

No officer, director, employee, agent, or other consultant of the City or a member of the immediate family or household of the aforesaid has directly or indirectly received or been promised any form of benefit, payment or compensation, whether tangible or intangible, in connection with the grant of this Agreement.

There are no undisclosed persons or entities interested with the Proposer in this Agreement. This Agreement is entered into by the Proposer without any connection with any other entity or person making a bid Bidder for the same purpose, and without collusion, fraud or conflict of interest. No elected or appointed officer or official, director, employee, agent or other consultant of the City, or of the State of Florida (including elected and appointed members of the legislative and executive branches of government), or member of the immediate family or household of any of the aforesaid:

1. Is interested on behalf of or through the Bidder directly or indirectly in any manner whatsoever in the execution or the performance of this Agreement, or in the services, supplies or work, to which this Agreement relates or in any portion of the revenues; or

2. Is an employee, agent, advisor, or consultant to the Proposer or to the best of the Proposer's knowledge, any sub bidder or supplier to the Bidder.

Neither the Bidder nor any officer, director, employee, agent, parent, subsidiary, or affiliate of the Bidder shall have an interest which is in conflict with the Bidder's faithful performance of its obligations under this Agreement; provided that the City, in its sole discretion, may consent in writing to such a relationship, and provided the Bidder provides the City with a written notice, in advance, which identifies all the individuals and entities involved and sets forth in detail the nature of the relationship and why it is in the City's best interest to consent to such relationship.

The provisions of this Article are supplemental to, not in lieu of, all applicable laws with respect to conflict of interest. In the event there is a difference between the standards applicable under this Agreement and those provided by statute, the stricter standard shall apply.

In the event the Bidder has no prior knowledge of a conflict of interest as set forth above and acquires information which may indicate that there may be an actual or apparent violation of any of the above, the Bidder shall promptly bring such information to the attention of the City's ENGINEER. The Bidder shall thereafter cooperate with the City's review and investigation of such information, and comply with the instructions the Bidder receives from the ENGINEER in regard to remedying the situation.

1.39 DISCRIMINATION

Any entity or affiliate who has been placed on the discriminatory vendor list may not submit a bid on a contract to provide goods or services to a public entity, may not submit a bid on a contract with a public entity for 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 award or perform work as a proposer, supplier, sub bidder, or consultant under contract with any public entity, and may not transact business with any public entity.

1.40 ADVICE OF OMISSION OR MISSTATEMENT

In the event it is evident to a Vendor responding to this SOLICITATION that the City has omitted or misstated a material requirement to this SOLICITATION and/or the services required by this SOLICITATION, the responding Vendor shall advise the contact identified in the SOLICITATION Clarifications and Questions section above of such omission or misstatement.

1.41 CONFIDENTIAL INFORMATION

Information contained in the Vendor's bid that is company confidential must be clearly identified in the bid/proposal itself. The City will be free to use all information in the Vendor's bid for the City's purposes, in accordance with State Law. Vendor bids shall remain confidential for 30 days or until a notice of intent to award is posted, which is sooner. The Vendor understands that any material supplied to the City may be subject to public disclosure under the Public Records Law.

1.42 GOVERNING LAW

This Contract, including appendices, and all matters relating to this Contract (whether in contract, statute, tort (such as negligence), or otherwise) shall be governed by, and construed in accordance with, the laws of the State of Florida. This shall apply notwithstanding such factors which include, but are not limited to, the place where the contract is entered into, the place where the accident occurs and notwithstanding application of conflicts of law principles.

1.43 LITIGATION VENUE

The parties waive the privilege of venue and agree that all litigation between them in the state courts shall take place in Broward County, Florida and that all litigation between them in the federal courts shall take place in the Southern District of Florida.

1.44 SOVEREIGN IMMUNITY

Nothing in this agreement shall be interpreted or construed to mean that the city waives its common law sovereign immunity or the limits of liability set forth in Section 768.28, Florida Statute.

1.45 SURVIVAL

The parties acknowledge that any of the obligations in this Agreement will survive the term, termination and cancellation hereof. Accordingly, the respective obligations of the Proposer and the City under this Agreement, which by nature would continue beyond the termination, cancellation or expiration thereof, shall survive termination, cancellation or expiration hereof.

1.46 INDEMNIFICATION AND HOLD HARMLESS AGREEMENT

The Contractor shall indemnify and hold harmless the City of Hollywood and its officers, employees, agents and instrumentalities from any and all liability, losses or damages. In addition, the City shall be entitled to attorney's fees and costs of defense, which the City of Hollywood, or its officers, employees, agents or instrumentalities may incur as a result of claims, demands, suits, causes of actions or proceedings of any kind or nature arising out of, relating to or resulting from the performance of this project by the awarded Bidder or its employees, agents, servants, partners, principals or subcontractors. Furthermore, the awarded Bidder shall pay all claims and losses in connection therewith and shall investigate and defend all claims, suits or actions of any kind of nature in the name of the City of Hollywood, where applicable, including appellate proceedings, and shall pay all costs, judgments, and attorney's fees which may issue thereon. The awarded Bidder expressly understands and agrees that any insurance protection required by the resulting agreement or otherwise provided by the awarded Bidder shall cover the City of Hollywood, its officers, employees, agents and instrumentalities and shall include claims for damages resulting from and/or caused by the negligence, recklessness or intentional wrongful misconduct of the Contractor and persons employed by or utilized by the Contractor in the performance of the contract.

1.47 PATENT AND COPYRIGHT INDEMNIFICATION

The Bidder warrants that all deliverables furnished hereunder, including but not limited to: services, equipment programs, documentation, software, analyses, applications, methods, ways, processes, and the like, do not infringe upon or violate any patent, copyrights, service marks, trade secret, or any other third party proprietary rights.

The Bidder shall be liable and responsible for any and all claims made against the City for infringement of patents, copyrights, service marks, trade secrets or any other third party proprietary rights, by the use or supplying of any programs, documentation, software, analyses, applications, methods, ways, processes, and the like, in the course of performance or completion of, or in any way connected with, the work, or the City's continued use of the deliverables furnished hereunder. Accordingly, the Bidder, at its own expense, including the payment of attorney's fees, shall indemnify, and hold harmless the City and defend any action brought against the City with respect to any claim, demand, and cause of action, debt, or liability.

In the event any deliverable or anything provided to the City hereunder, or a portion thereof, is held to constitute an infringement and its use is or may be enjoined, the Bidder shall have the obligation, at the City's option, to (i) modify, or require that the applicable sub bidder or supplier modify, the alleged infringing item(s) at the Bidder's expense, without impairing in any respect the functionality or performance of the item(s), or (ii) procure for the City, at the Bidder's expense, the rights provided under this Agreement to use the item(s).

The Bidder shall be solely responsible for determining and informing the City whether a prospective supplier or sub bidder is a party to any litigation involving patent or copyright infringement, service mark, trademark, violation, or proprietary rights claims or is subject to any injunction which may prohibit it from providing any deliverable hereunder. The Bidder shall enter into agreements with all suppliers and sub bidder at the Bidder's own risk. The City may reject any deliverable that it believes to be the subject of any such litigation or injunction, or if, in the City's judgment, use thereof would delay the work or be unlawful.

The Bidder shall not infringe any copyright, trademark, service mark, trade secrets, patent rights, or other intellectual property rights in the performance of the work.

1.48 ADVERTISING

Vendor shall not advertise or publish the fact that the City has placed this order without prior written consent from the City, except as may be necessary to comply with a proper request for information from an authorized representative of a governmental unit or agency.

1.49 DISCLAIMER

The Hollywood may, in its sole discretion, accept or reject, in whole or in part, for any reason whatsoever any or all bids; re-advertise this SOLICITATION, postpone or cancel at any time this SOLICITATION process; or, waive any formalities of or irregularities in the bid process. Bids that are not submitted on time and/or do not conform to the City of Hollywood's requirements will not be considered. After all bids are analyzed, organization(s) submitting bid that appear, solely in the opinion of the City of Hollywood, to be the most competitive, shall be submitted to the City of Hollywood's City Commission, and the final selection will be made shortly thereafter with a timetable set solely by the City of Hollywood. The selection by the City of Hollywood shall be based on the bid, which is, in the sole opinion of the City Commission of the City of Hollywood, in the best interest of the City of Hollywood. The issuance of this SOLICITATION constitutes only an invitation to make a bid to the City of Hollywood. The City of Hollywood reserves the right to determine, in its sole discretion, whether any aspect of the bid satisfies the criteria established by the City. In all cases the City of Hollywood shall have no liability to any proposer for any costs or expense incurred in connection with this bid or otherwise.

1.50 TRADEMARKS

The City warrants that all trademarks the City requests the Vendor to affix to articles purchased are those owned by the City and it is understood that the Vendor shall not acquire or claim any rights, title, or interest therein, or use any of such trademarks on any articles produced for itself or anyone other than the City.

1.51 RIGHT TO REQUEST ADDITIONAL INFORMATION

The City reserves the right to request any additional information that might be deemed necessary during the evaluation process.

1.52 BID PREPARATION COSTS

The Vendor is responsible for any and all costs incurred by the Vendor or his/her sub bidders in responding to this solicitation.

1.53 DESIGN COSTS (N/A)

1.54 ADDITIONAL CHARGES

No additional charges, other than those listed on the price breakdown sheets, shall be made. Prices quoted will include verification/coordination of order, all costs for shipping, delivery to all sites, unpacking, setup, installation, operation, testing, cleanup, training and Vendor travel charges.

1.55 RIGHTS TO PERTINENT MATERIALS

All responses, inquires, and correspondence relating to this SOLICITATION and all reports, charts, displays, schedules, exhibits and other documentation produced by the Vendor that are submitted as part of the bid shall become the property of the City upon receipt, a part of a public record upon opening, and will not be returned.

1.56 INSURANCE REQUIREMENTS

See insurance requirements in the main solicitation document.

1.57 NATURE OF THE AGREEMENT

The Agreement incorporates and includes all negotiations, correspondence, conversations, agreements, and understandings applicable to the matters contained in the Agreement. The parties agree that there are no commitments, agreements, or understandings concerning the subject matter of the Agreement that are not contained in the Agreement, and that the Agreement contains the entire agreement between the parties as to all matters contained herein. Accordingly, it is agreed that no deviation from the terms hereof shall be predicated upon any prior representations or agreements, whether oral or written. It is further agreed that any oral representations or modifications concerning this Agreement shall be of no force or effect, and that the Agreement may be modified, altered or amended only by a written amendment duly executed by both parties hereto or their authorized representatives.

The Bidder shall provide the services set forth in the Scope of Services, and render full and prompt cooperation with the City in all aspects of the services performed hereunder.

The Bidder acknowledges that the Agreement requires the performance of all things necessary for or incidental to the effective and complete performance of all work and services under this Contract. All things not expressly mentioned in the Agreement but necessary to carrying out its intent are required by the Agreement, and the Bidder shall perform the same as though they were specifically mentioned, described and delineated.

The Bidder shall furnish all labor, materials, tools, supplies, and other items required to perform the work and services that are necessary for the completion of this Contract. All work and services shall be accomplished at the direction of and to the satisfaction of the City's ENGINEER.

The Bidder acknowledges that the City shall be responsible for making all policy decisions regarding the Scope of Services. The Proposer agrees to provide input on policy issues in the form of recommendations.

The Bidder agrees to implement any and all changes in providing services hereunder as a result of a policy change implemented by the City. The Bidder agrees to act in an expeditious and fiscally sound manner in providing the City with input regarding the time and cost to implement said changes and in executing the activities required to implement said changes

1.58 AUTHORITY OF THE CITY'S ENGINEER

The Bidder hereby acknowledges that the City's ENGINEER will determine in the first instance all questions of any nature whatsoever arising out of, under, or in connection with, or in any way related to or on account of, this Agreement including without limitations: questions as to the value, acceptability and fitness of the services; questions as to either party's fulfillment of its obligations under the Contract; negligence, fraud or misrepresentation before or subsequent to acceptance of the Bid; questions as to the interpretation of the Scope of Services; and claims for damages, compensation and losses.

The Bidder shall be bound by all determinations or orders and shall promptly obey and follow every order of the ENGINEER, including the withdrawal or modification of any previous order and regardless of whether the Bidder agrees with the ENGINEER's determination or order. Where orders are given orally, they will be issued in writing by the ENGINEER as soon thereafter as is practicable.

The Bidder must, in the final instance, seek to resolve every difference concerning the Agreement with the ENGINEER. In the event that the ENGINEER and the Bidder are unable to resolve their difference, the Bidder may initiate a dispute in accordance with the procedures set forth in the section below. Exhaustion of these procedures shall be a condition precedent to any lawsuit permitted hereunder.

In the event of such dispute, the parties to this Agreement authorize the City Manager or designee, who may not be the ENGINEER or anyone associated with this Project, acting personally, to decide all questions arising out of, under, or in connection with, or in any way related to or on account of the Agreement (including but not limited to claims in the nature of breach of contract, fraud or misrepresentation arising either before or subsequent to execution hereof) and the decision of each with respect to matters within the City Manager's purview as set forth above shall be conclusive, final and binding on the parties. Any such dispute shall be brought, if at all, before the City Manager within 10 days of the occurrence, event or act out of which the dispute arises.

The City Manager may base this decision on such assistance as may be desirable, including advice of experts, but in any event shall base the decision on an independent and objective determination of whether the Bidder's performance or any deliverable meets the requirements of this Agreement and any specifications with respect thereto set forth herein. The effect of any decision shall not be impaired or waived by any negotiations or settlements or offers made in connection with the dispute, whether or not the City Manager participated therein, or by any prior decision of others, which prior decision shall be deemed subject to review, or by any termination or cancellation of the Agreement. All such disputes shall be submitted in writing by the Bidder to the City Manager for a decision, together with all pertinent information in regard to such questions, in order that a fair and impartial decision may be made. The parties agree that whenever the City Manager is entitled to exercise discretion or judgment or to make a determination or form an opinion pursuant to the provisions of this Article, such action shall be deemed fair and impartial when exercised or taken. The City Manager shall render a decision in writing and deliver a copy of the same to the Bidder. Except as such remedies may be limited or waived elsewhere in the Agreement, the Bidder reserves the right to pursue any remedies available under law after exhausting the provisions of this Article.

1.59 MUTUAL OBLIGATIONS

This Agreement, including attachments and appendices to the Agreement, shall constitute the entire Agreement between the parties with respect hereto and supersedes all previous communications and representations or agreements, whether written or oral, with respect to the subject matter hereof unless acknowledged in writing by the duly authorized representatives of both parties.

Nothing in this Agreement shall be construed for the benefit, intended or otherwise, of any third party that is not a parent or subsidiary of a party or otherwise related (by virtue of ownership control or statutory control) to a party.

In those situations where this Agreement imposes an indemnity or defense obligation on the Bidder, the City may, at its expense, elect to participate in the defense if the City should so choose. Furthermore, the City may at its own expense defend or settle any such claims if the Bidder fails to diligently defend such claims, and thereafter seek indemnity for costs and attorney's fees from the Bidder.

1.60 SUBCONTRACTUAL RELATIONS

If the Bidder will cause any part of this Agreement to be performed by a sub bidder, the provisions of this Contract will apply to such sub bidder and its officers, agents and employees in all respects as if it and they were employees of the Proposer; and the Proposer will not be in any manner thereby discharged from its obligations and liabilities hereunder, but will be liable hereunder for all acts and negligence of the sub bidder, its officers, agents, and employees, as if they were employees of the Proposer. The services performed by the sub bidder will be subject to the provisions hereof as if performed directly by the Bidder.

The Bidder, before making any subcontract for any portion of the services, will state in writing to the City the name of the proposed sub bidder, the portion of the services which the sub bidder is to do, the place of business of such sub bidder, and such other information as the City may require. The City will have the right to require the Bidder not to award any subcontract to a person, firm or corporation disapproved by the City.

Before entering into any subcontract hereunder, the Bidder will inform the sub bidder fully and completely of all provisions and requirements of this Agreement relating either directly or indirectly to the services to be performed. Such services performed by such sub bidder will strictly comply with the requirements of this Contract.

In order to qualify as a sub bidder satisfactory to the City, in addition to the other requirements herein provided, the sub bidder must be prepared to prove to the satisfaction of the City that it has the necessary facilities, skill and experience, and ample financial resources to perform the services in a satisfactory manner. To be considered skilled and experienced, the sub bidder must show to the satisfaction of the City that it has satisfactorily performed services of the same general type which are required to be performed under this Agreement.

The City shall have the right to withdraw its consent to a subcontract if it appears to the City that the subcontract will delay, prevent, or otherwise impair the performance of the Bidder's obligations under this Agreement. All sub bidder are required to protect the confidentiality of the City and City's proprietary and confidential information. The Bidder shall furnish to the City copies of all subcontracts between the Bidder and sub bidder and suppliers hereunder. Within each such subcontract, there shall be a clause for the benefit of the City permitting the City to request completion of performance by the sub bidder of its obligations under the subcontract, in the event the City finds the Bidder in breach of its obligations, and the option to pay the sub bidder directly for the performance by such sub bidder. The foregoing shall neither convey nor imply any obligation or liability on the part of the City to any sub bidder hereunder as more fully described herein.

1.61 PROMPT PAYMENT: LATE PAYMENTS BY BIDDER TO SUB BIDDER AND MATERIAL SUPPLIERS; PENALTY:

When a Bidder receives from the City of Hollywood any payment for contractual services, commodities, materials, supplies, or construction contracts, the proposer shall pay such moneys received to each sub bidder and material supplier in proportion to the percentage of work completed by each sub bidder and material supplier at the time of receipt. If the Bidder receives less than full payment, then the proposer shall be required to disburse only the funds received on a pro rata basis to the sub bidder and materials Suppliers, each receiving a prorated portion based on the amount due on the payment. If the proposer without reasonable cause fails to make payments required by this section to sub bidder and material suppliers within fifteen (15) working days after the receipt by the Bidder of full or partial payment, the proposer shall pay to the sub bidder and material suppliers a penalty in the amount of one percent (1%) of the amount due, per month, from the expiration of the period allowed herein for payment. Such penalty shall be in addition to actual payments owed. Retainage is also subject to the prompt payment requirement and must be returned to the sub bidder or material

supplier whose work has been completed, even if the prime contract has not been completed. The Bidder shall include the above obligation in each subcontract it signs with a sub bidder or material supplier.

1.62 TERMINATION FOR CONVENIENCE AND SUSPENSION OF WORK

The City may terminate this Agreement if an individual or corporation or other entity attempts to meet its contractual obligation with the City through fraud, misrepresentation or material misstatement.

The City may, as a further sanction, terminate or cancel any other contract(s) that such individual or corporation or other entity has with the City. Such individual, corporation or other entity shall be responsible for all direct and indirect costs associated with such termination or cancellation, including attorney's fees.

The foregoing notwithstanding, any individual, corporation or other entity which attempts to meet its contractual obligations with the City through fraud, misrepresentation or material misstatement may be debarred from City contracting in accordance with the City debarment procedures. The Bidder may be subject to debarment for failure to perform and any other reasons related to the Bidder's breach or failure of satisfactory performance.

In addition to cancellation or termination as otherwise provided in this Agreement, the City may at any time, in its sole discretion, with or without cause, terminate this Agreement by written notice to the Bidder and in such event:

The Bidder shall, upon receipt of such notice, unless otherwise directed by the City:

1. Stop work on the date specified in the notice ("the Effective Termination Date");
2. Take such action as may be necessary for the protection and preservation of the City's materials and property;
3. Cancel orders;
4. Assign to the City and deliver to any location designated by the City any non-cancelable orders for deliverables that are not capable of use except in the performance of this Agreement and which have been specifically developed for the sole purpose of this Agreement and not incorporated in the services;
5. Take no action which will increase the amounts payable by the City under this Agreement.

In the event that the City exercises its right to terminate this Agreement pursuant to this Article, the Bidder will be compensated as stated in the payment articles herein, for the:

1. Portion of the services completed in accordance with the Agreement up to the Effective Termination Date; and
2. Non-cancelable deliverables that are not capable of use except in the performance of this Agreement and which have been specifically developed for the sole purpose of this Agreement but not incorporated in the services.

All compensation pursuant to this Article is subject to audit.

1.63 EVENT OF DEFAULT

An Event of Default shall mean a breach of this Agreement by the Bidder. Without limiting the generality of the foregoing and in addition to those instances referred to herein as a breach, an Event of Default, shall include the following:

1. The Bidder has not delivered deliverables on a timely basis;
2. The Bidder has refused or failed, except in any case for which an extension of time is provided, to supply enough properly skilled staff personnel;
3. The Bidder has failed to make prompt payment to sub bidder or suppliers for any services;

4. The Bidder has become insolvent (other than as interdicted by the bankruptcy laws), or has assigned the proceeds received for the benefit of the Bidder 's creditors, or the Bidder has taken advantage of any insolvency statute or debtor/creditor law or if the Bidder 's affairs have been put in the hands of a receiver;
5. The Bidder has failed to obtain the approval of the City where required by this Agreement;
6. The Bidder has failed to provide "adequate assurances" as required under subsection "B" below; and
7. The Bidder has failed in the representation of any warranties stated herein.

When, in the opinion of the City, reasonable grounds for uncertainty exist with respect to the Proposer's ability to perform the services or any portion thereof, the City may request that the Proposer, within the time frame set forth in the City's request, provide adequate assurances to the City, in writing, of the Proposer's ability to perform in accordance with terms of this Agreement. Until the City receives such assurances the City may request an adjustment to the compensation received by the Proposer for portions of the services which the Proposer has not performed. In the event that the Proposer fails to provide to the City the requested assurances within the prescribed time frame, the City may:

1. Treat such failure as a repudiation of this Agreement;
2. Resort to any remedy for breach provided herein or at law, including but not limited to, taking over the performance of the services or any part thereof either by itself or through others.

In the event the City shall terminate this Agreement for default, the City or its designated representatives may immediately take possession of all applicable equipment, materials, products, documentation, reports and data.

1.64 REMEDIES IN THE EVENT OF DEFAULT

If an Event of Default occurs, the Proposer shall be liable for all damages resulting from the default, including but not limited to:

- A. Lost revenues;
- B. The difference between the cost associated with procuring services hereunder and the amount actually expended by the City for procurement of services, including procurement and administrative costs; and,
- C. Such other damages that the City may suffer.

The Proposer shall also remain liable for any liabilities and claims related to the Proposer's default. The City may also bring any suit or proceeding for specific performance or for an injunction.

1.65 BANKRUPTCY

The City reserves the right to terminate this contract if, during the term of any contract the Proposer has with the City, the Proposer becomes involved as a debtor in a bankruptcy proceeding, or becomes involved in a reorganization, dissolution, or liquidation proceeding, or if a trustee or receiver is appointed over all or a substantial portion of the property of the Proposer under federal bankruptcy law or any state insolvency law.

1.66 CANCELLATION FOR UNAPPROPRIATED FUNDS

The obligation of the City for payment to a Proposer 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.**

1.67 VERBAL INSTRUCTIONS PROCEDURE

No negotiations, decisions, or actions shall be initiated or executed by the Proposer as a result of any discussions with any City employee. Only those communications which are in writing from an authorized City representative may be considered. Only written communications from Proposers, which are signed by a person designated as authorized to bind the Proposer, will be recognized by the City as duly authorized expressions on behalf of the Proposer.

1.68 E-VERIFY

Proposer acknowledges that the City may be utilizing the Proposer's services for a project that is funded in whole or in part by State funds pursuant to a contract between the City and a State agency. The Proposer shall be responsible for complying with the E-Verify requirements in the contract and using the U.S. Department of Homeland Security's E-Verify system to verify the employment of all new employees hired by the Proposer during the Agreement term. The Proposer is also responsible for e-verifying its bidders, if any, pursuant to any agreement between the City and a State Agency, and reporting to the City any required information. The Proposer acknowledges that the terms of this paragraph are material terms, the breach of any of which shall constitute a default under this Agreement.

1.69 BUDGETARY CONSTRAINTS

In the event the City is required to reduce contract costs due to budgetary constraints, all services specified in this document may be subject to a permanent or temporary reduction in budget. In such an event, the total cost for the affected service shall be reduced as required. The Proposer shall also be provided with a minimum 30-day notice prior to any such reduction in budget.

1.70 COST ADJUSTMENTS (As Applicable)

The cost for all items as quoted herein shall remain firm for the first term of the contract. Costs for subsequent years and any extension term years shall be subject to an adjustment only if increases occur in the industry. However, unless very unusual and significant changes have occurred in the industry, such increases shall not exceed 3% per year or, whichever is less, the latest yearly percentage increase in the All Urban Consumers Price Index (CPU-U) (National) as published by the Bureau of Labor Statistics, U.S. Dept. of Labor. The yearly increase or decrease in the CPI shall be that latest index published and available ninety (90) days prior to the end of the contract year than in effect compared to the index for the same month one year prior. Any requested cost increase shall be fully documented and submitted to the City at least ninety (90) days prior to the contract anniversary date. Any approved cost adjustments shall become effective upon the anniversary date of the contract. In the event the CPI or industry costs decline, the City shall have the right to receive from the Proposer a reduction in costs that reflects such cost changes in the industry. The City may, after examination, refuse to accept the adjusted costs if they are not properly documented, increases are considered to be excessive, or decreases are considered to be insufficient. In the event the City does not wish to accept the adjusted costs and the matter cannot be resolved to the satisfaction of the City, the contract can be cancelled by the City upon giving thirty (30) days written notice to the Proposer.

1.71 OSHA STANDARDS

Proposer acknowledges and agrees that as Contractor for the City of Hollywood, Florida, within the limits of the City of Hollywood, Florida, will have the sole responsibility for compliance with all requirements of the Federal Occupational Safety and Health Act of 1970, and all State and local safety and health regulations, and agrees to defend, indemnify and hold harmless the City of Hollywood, Florida, its officials, employees, service providers, and its agents against any and all legal liability or loss the City of Hollywood, Florida may incur due to the Contractor's failure to comply with such act.

END OF SECTION

FORM 1

SUBMITTAL CHECKLIST FORM

The items below are required components of your solicitation response in order for your bid/proposal/submittal to be considered responsive and responsible. Please complete and submit this submittal checklist form as the cover page of your submittal with all of the items below in the order listed.

Please indicate Yes or No in the "Submitted (Yes/No)" column below to indicate which required components were provided with your submittal.

Submitted (Yes/No)	Required Bid Components
✓	This Submittal Checklist Form completed and included as the cover page of your submittal.
✓	A Table of Contents that clearly identifies each section and page number of your submittal.
✓	Information and/or documentation that addresses and/or meets the requirements outlined in Section III – Scope of Work/Services, including any procedural or technical enhancements/innovations which do not materially deviate from the objectives or required content of the Scope of Work/Services.
	Forms (Completed) Form 1 Submittal Checklist Form* Form 2 Acknowledgement and Signature Page ✓ Form 3 Bid Form* ✓ Form 4 Vendor Reference Form* Form 5 Hold Harmless and Indemnity Clause Form 6 Non-Collusion Affidavit ✓ Form 7 Sworn Statement...Public Entity Crimes Form 8 Certifications Regarding Debarment... Form 9 Drug-Free Workplace Program Form 10 Solicitation, Giving, and Acceptance... ✓ Form 11 W-9 (Request for Taxpayer Identification) ✓ Form 12 Trench Safety Form ✓ Form 13 Bid Guaranty Form ✓ Form 14 List of Subcontractors
	Certificate(s) of insurance that meet the requirements of Section 2.17
	Proof of State of Florida Sunbiz Registration

This checklist is only a guide, please read the entire solicitation to ensure that your submission includes all required information and documentation.

FORM 3
 BID FORM

				Southeastern Engineering Contracto	
Line Item	Description	Quantity	Unit of Measure	Unit Cost	Total
	Mobilization and Demobilization (shall not exceed				
1	7.5% of the sum of Bid Items No. 3 to No. 5).	1	Lump Sum	\$11,310.00	\$11,310.00
2	Maintenance of Traffic (3%)	1	Lump Sum	\$5,010.00	\$5,010.00
3	Record Drawings	1	Lump Sum	\$7,800.00	\$7,800.00
	Prevention, Control & Abatement of Erosion &				
4	Water Pollution	1	Lump Sum	\$5,460.00	\$5,460.00
5	Demolish Existing 5' Sidewalk (Up to 25')	1	Lump Sum	\$500.00	\$500.00
	Furnish & Install 8" Schedule 80 PVC (Up to 10'				
6	Depth)	75	Linear Foot	\$415.00	\$31,125.00
7	Manhole Tie-in	2	Each	\$3,510.00	\$7,020.00
8	40' Stand Pipe	2	Each	\$10,010.00	\$20,020.00
9	Furnish and Install Butterfly Valve and Valve Box	2	Each	\$2,970.00	\$5,940.00
10	Install 3' x 3' x 10' Concrete Pedestal 7' deep	2	Each	\$9,490.00	\$18,980.00
11	Install 3' x 3' x 5.5' Concrete Pedestal 5.5' deep	1	Each	\$5,590.00	\$5,590.00
12	Install 5' Wide Sidewalk (Up to 30')	1	Lump Sum	\$5,330.00	\$5,330.00
	Remove & Replace Existing Manhole and Ring with				
13	Bolted type	4	Lump Sum	\$2,925.00	\$11,700.00
	Connect 4" PVC Ventilation Pipe between Sewered				
14	Sections of Conflict Box	1	Lump Sum	\$21,710.00	\$21,710.00
	Connect & Install Ventilation Pipe from Conflict Box				
15	to Roundabout	1	Lump Sum	\$5,070.00	\$5,070.00
16	McKinley St. Asphalt Restoration	1	Lump Sum	\$9,100.00	\$9,100.00
17	McKinley St. Driveway Restoration	1	Lump Sum	\$1,600.00	\$1,600.00
18	McKinley St. Sod Restoration	1	Lump Sum	\$1,950.00	\$1,950.00
19	Tyler St. Asphalt & Brick Restoration	1	Lump Sum	\$3,640.00	\$3,640.00
	Tyler St. Roundabout Concrete & Vegetation				
20	Restoration	1	Lump Sum	\$6,630.00	\$6,630.00
	Undefined Conditions Allowance (Input \$15,000 in				
21	this line item)	1	Allowance	\$15,000.00	\$15,000.00
	Consideration for Indemnification (Input \$10 in this				
22	line item)	1	Lump Sum	\$10.00	\$10.00
	Total				\$200,495.00

BROWARD COUNTY LOCAL BUSINESS TAX RECEIPT

115 S. Andrews Ave., Rm. A-100, Ft. Lauderdale, FL 33301-1895 – 954-831-4000

VALID OCTOBER 1, 2022 THROUGH SEPTEMBER 30, 2023

DBA: SOUTHEASTERN ENGINEERING
Business Name: CONTRACTORS, INC.

Receipt #: 189-319371
Business Type: ALL OTHER TYPES CONTRACTOR
(GENERAL ENGINEERED
CONSTRUCTION BUILDER)

Owner Name: EDUARDO DOMINGUEZ
Business Location: 911 NW 209TH AVE STE 101
PEMBROKE PINES
Business Phone: 305-557-4226

Business Opened: 01/01/2021
State/County/Cert/Reg: 93-1360
Exemption Code:

Rooms Seats Employees Machines Professionals
23

Tax Amount	For Vending Business Only				Collection Cost	Total Paid
	Number of Machines:		Vending Type:			
	Transfer Fee	NSF Fee	Penalty	Prior Years		
81.00	0.00	0.00	0.00	0.00	0.00	81.00

THIS RECEIPT MUST BE POSTED CONSPICUOUSLY IN YOUR PLACE OF BUSINESS

**THIS BECOMES A TAX RECEIPT
WHEN VALIDATED**

This tax is levied for the privilege of doing business within Broward County and is non-regulatory in nature. You must meet all County and/or Municipality planning and zoning requirements. This Business Tax Receipt must be transferred when the business is sold, business name has changed or you have moved the business location. This receipt does not indicate that the business is legal or that it is in compliance with State or local laws and regulations.

Mailing Address:

SOUTHEASTERN ENGINEERING CONTRACTO
911 NW 209TH AVE STE 101
PEMBROKE PINES, FL
33029-2112

Receipt # WWW-21-00242707
Paid 07/27/2022 81.00

2022 - 2023

BROWARD COUNTY LOCAL BUSINESS TAX RECEIPT

115 S. Andrews Ave., Rm. A-100, Ft. Lauderdale, FL 33301-1895 – 954-831-4000

VALID OCTOBER 1, 2022 THROUGH SEPTEMBER 30, 2023

DBA: SOUTHEASTERN ENGINEERING
Business Name: CONTRACTORS, INC.

Receipt #: 189-319371
Business Type: ALL OTHER TYPES CONTRACTOR
(GENERAL ENGINEERED
CONSTRUCTION BUILDER)

Owner Name: EDUARDO DOMINGUEZ
Business Location: 911 NW 209TH AVE STE 101
PEMBROKE PINES
Business Phone: 305-557-4226

Business Opened: 01/01/2021
State/County/Cert/Reg: 93-1360
Exemption Code:

Rooms Seats Employees Machines Professionals
23

Signature	For Vending Business Only				Collection Cost	Total Paid
	Number of Machines:		Vending Type:			
Tax Amount	Transfer Fee	NSF Fee	Penalty	Prior Years		
81.00	0.00	0.00	0.00	0.00	0.00	81.00

Receipt # WWW-21-00242707
Paid 07/27/2022 81.00

SOUTHEASTERN ENGINEERING
CONTRACTORS INC.
911 NW 209 AVE STE 101
PEMBROKE PINES FL 33029-0000

CITY OF PEMBROKE PINES
601 CITY CENTER WAY, LBTR-4TH FLOOR
PEMBROKE PINES, FL 33029
Local Business Tax Certificate

LOCAL BUSINESS TAX RECEIPT

In the event the business to which this receipt was issued changes hands, the receipt will become null and void. An application for a new receipt must be made.

Business Name: SOUTHEASTERN ENGINEERING
CONTRACTORS INC.
Business Location: 911 NW 209 AVE STE 101 ST
PEMBROKE PINES, FL 33029-0000

Account Number: 20190374-2022-1
Business Description: ADMINISTRATION SERVICES
Receipt Expiration: Expires on 9/30/2023

Business Classifications

SIGN-Sign

ADMSER-administrative services



PROJECTS UNDER CONSTRUCTION

Project Title:	NE 3rd and NE 4th Street Drainage Improvements
Type of Construction:	Storm Water Improvements
Contract Amount:	\$941,870.60
Type of Contract:	Unit Prices
Completed To Date:	2%
Client:	City of Pompano Beach
Client's Rep:	Mr. Christopher Schlageter Engineering Project Manager (954) 786-4022
Completion Date:	Aug-23
Project Title:	Crandon Boulevard and Harbor Drive Intersection Improvements
Type of Construction:	Storm Water Improvements
Contract Amount:	\$440,233.80
Type of Contract:	Unit Prices
Completed To Date:	0%
Client:	Village of Key Biscayne
Client's Rep:	Mr. Andrew List, PE Associate Project Manager (954) 921-3930
Completion Date:	Jul-23
Project Title:	On-Call and Emergency Water and Sewer Utility Repair Services
Type of Construction:	Water and Sewer Utility Repair Services
Contract Amount:	\$1,235,670.40
Type of Contract:	Unit Prices
Completed To Date:	40%
Client:	City of Hollywood
Client's Rep:	Ms. Wilhelmina Montero, P.E. Senior Project Manager, Public Utilities (954) 921-
Completion Date:	Apr-26
Project Title:	Lift Station # 2 Rehabilitation
Type of Construction:	Sewer Pump Station
Contract Amount:	\$1,515,584.00
Type of Contract:	Unit Prices
Completed To Date:	0%
Client:	City of Hallandale
Client's Rep:	Mr. Manga Ebbe. Construction Program Manager, Public Works (954) 457-3043
Completion Date:	Apr-24
Project Title:	Annual Storm Drainage Contract
Type of Construction:	Drainage and Roadway Improvements
Contract Amount:	2,000,000 Contract Cap
Type of Contract:	Unit Prices
Completed To Date:	30%
Client:	City of Fort Lauderdale
Client's Rep:	Mr. Rares Petrica, Project Manager , Public Words, 954 828-6720
Completion Date:	Jun-25
Project Title:	Rehabilitation of Lift Station 22A, 21D, and New Force Main
Type of Construction:	Sewer Pump Stations and Force Main
Contract Amount:	\$2,623,312.75
Type of Contract:	Unit Prices
Completed To Date:	12%
Client:	City of Coral Springs
Client's Rep:	Najla Zerrouki, City Engineer 954 510 4700
Completion Date:	Dec-23
Project Title:	Water System Interconnect Upgrades
Type of Construction:	Water Main Improvements
Contract Amount:	\$642,890.00

Type of Contract: Unit Prices
Completed To Date: 98%
Client: City of Pompano Beach
Client's Rep: Mathew Marsh, McCafferty Brinson Consulting, LLC 954 918 0744
Completion Date: Apr-23

Project Title: **Civil Work Related to Taft Street FM Wall Loss Verification**
Type of Construction: Water Main, FM and Sanitary Sewer Improvements
Contract Amount: \$469,887.00
Type of Contract: Unit Prices
Completed To Date: 95%
Client: City of Hollywood
Client's Rep: Juan Jose Figueroa, PE Senior Project Manager- ECSD 954-864-6622
Completion Date: Apr-23



FIRM REFERENCES

Project Title: Hollywood State Road 7 Lift Stations W12, W13, W23, W24
Contract Amount: \$3,007,950.00
Client: City of Hollywood
Client's Rep.: Feng Jiang, Assistant Director Public Utilities 954-921-3930,
FJIANG@hollywoodfl.org

Scottie Paulino, Public Utilities 954-350-1266,
SPAULINO@hollywoodfl.org

Project Title: Center Island Stormwater Pump Station.
Contract Amount: \$1,235,288.50
Client: Town of Golden Beach
Client's Rep.: Alex Diaz, Town Manager, 305-932 0744
alexdiaz@goldenbeach.us

Project Title: Lift Station 21C Restructuring
Contract Amount: \$986,387.00
Client: City of Coral Springs
Client's Rep.: Najla Zerrouki, City Engineer 954-510-4700,
nzerrouki@coralsprings.org

Project Title: Lift Station 21 Renovation
Contract Amount: \$454,528.88
Client: City of Margate
Client's Rep.: Keith Schriener (Craig A. Smith & Associates), 954-618-9978
kschriener@craigasmith.com

Project Title: Hallandale Pump Stations Maintenance
Contract Amount: Varies
Client: City of Hallandale
Client's Rep.: Charles Casimir, Utilities Director, 786-284-2222
ccasimir@hallandalebeachfl.gov





Ron DeSantis, Governor

Julie I. Brown, Secretary



**STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION**

CONSTRUCTION INDUSTRY LICENSING BOARD

THE GENERAL CONTRACTOR HEREIN HAS REGISTERED UNDER THE
PROVISIONS OF CHAPTER 489, FLORIDA STATUTES

(INDIVIDUAL MUST MEET ALL LOCAL LICENSING
REQUIREMENTS PRIOR TO CONTRACTING IN ANY AREA)

DOMINGUEZ, EDUARDO

SOUTHEASTERN ENGINEERING CONTRACTORS, INC.
12054 N W 98TH AVE
HIALEAH GARDENS FL 33018

LICENSE NUMBER: RG0066528

EXPIRATION DATE: AUGUST 31, 2023

Always verify licenses online at MyFloridaLicense.com



Do not alter this document in any form.

This is your license. It is unlawful for anyone other than the licensee to use this document.

BCS

Account

[Sign In](#)

Permits

[Request Inspection](#)

[Search for Permit](#)

[Search for Address](#)

[Request Inspection](#)

Contractor Licenses

[Find My Licenses](#)

[Search for License](#)

[Renew License](#)

Elevators

[Search for Elevator](#)

[Renew Elevator Certificate](#)

Contractor License

License Information

Expiration Date: 06/30/2023
CC Number: 93-1360
License Issued: 12/01/1993
License Category: General Engineered Construction Builder
License Status: Licensed

Contractor Information

Contractor Name: DOMINGUEZ, EDUARDO

Email Address: EDDIE@SOUTHEASTRMENG.COM; ed.sec@comcast.net
Contracting Firm: SOUTHEASTERN ENGINEERING CONTRACTORS INC.
Contracting Firm Phone: (305) 557-4226
Contracting Firm Address: 911 NW 209 AVE SUITE 101
PEMBROKE PINES, FL 33029-

Temporary License

Temporary License
Expiration Date:

Restrictions

Restrictions:



LIST OF EQUIPMENT

<i>YEAR</i>	<i>MAKE</i>	<i>MODEL</i>	<i>SEC CODE</i>
2010	Caterpillar	Excavator 305C	E-2
2014	Caterpillar	Excavator 314ELCR	E-3
2009	Caterpillar	Mini-Excavator	
2018	Case	Excavator CX55B	E-4
1997	Caterpillar	Loader 938F	L - 9
1996	Caterpillar	Loader 938F	L - 10
1995	Caterpillar	Loader 938F	L - 12
1998	Caterpillar	Loader 928G	L - 13
1999	Caterpillar	Roller CB214C	R - 1
2009	Caterpillar	Roller CB224K	R - 8
2000	Caterpillar	Roller CB224E	R - 9
2006	Bobcat	Skid-Steer Loader 250	
2010	Bobcat	Excavator 418	
2001	Laymor	Broom 6HB	ES - 1
2001	Laymor	Broom 8HC	ES - 2
2010	Leeboy	Paver 7000	AF
1999	GMC	Water Truck (PTO)	T - 3
2005	Eagle Beaver	50GSL Lowboy Trailer	
2001	International	Flatbed 4300 SBA	T-11
2007	Mack	Dump Truck CXP612	T-1
2000	Mack	Truck	T-7
2016	Traxx	Trailer	T-8
2005	Caterpillar	Forklift V50E	F-1
2017	Dodge	RAM	P-1
2018	Dodge	RAM	P-2
2019	Dodge	RAM	P-3
2009	Ford	F-150	P-9
2011	Ford	F-150	P-11



PROJECT EXPERIENCE (Last 5 Years)

Project Title: **Lift Station W-14 Upgrade**
Type of Construction: Sewer Pump Station
Contract Amount: \$2,395,072.00
Type of Contract: Unit Prices
Client: City of Hollywood
Client's Rep: Mr. Feng Jian PE, Assistant Director (954)-921-3930
Completion Date: Sep-22

Project Title: **El Jardin Stormwater Improvements**
Type of Construction: Drainage and Roadway Improvements
Contract Amount: \$322,643.00
Type of Contract: Unit Prices
Client: Village Of El Portal
Client's Rep: Mr. Orlando Rubio, Senior Supervising Engineer, 561 314 4445, x203
Completion Date: Apr-22

Project Title: **Center Island Pump Station**
Type of Construction: Stormwater Pump Station
Contract Amount: \$1,235,280.50
Type of Contract: Unit Prices
Client: Town of Golden Beach
Client's Rep: Mr. Orlando Rubio, Senior Supervising Engineer 561 314 4445, x203
Completion Date: Dec-22

Project Title: **CDBG 47th NW 8th Ave**
Type of Construction: Drainage and Roadway Improvements
Contract Amount: \$136,387.50
Type of Contract: Unit Prices
Client: City of Wilton Manors
Client's Rep: Todd De Jesus, City Project Manager 954 290 5378
Completion Date: Jul-22

Project Title: **CDBG 45th and 46th NW 8th Ave**
Type of Construction: Drainage and Roadway Improvements
Contract Amount: \$419,350.50
Type of Contract: Unit Prices
Client: City of Wilton Manors
Client's Rep: Todd De Jesus, City Project Manager
Completion Date: Jan-22

Project Title: **Annual Storm Drainage Contract**
Type of Construction: Drainage and Roadway Improvements
Contract Amount: 2,000,000 Contract Cap
Type of Contract: Unit Prices
Client: City of Fort Lauderdale
Client's Rep: Mr. Rares Petrica, Project Manager , Public Works, 954 828-6720
Completion Date: Jun-21

Project Title: **Outfall 13 at 14 Harbor Point Construction Project**
Type of Construction: Drainage
Contract Amount: \$234,302.30
Type of Contract: Unit Prices
Client: Village of Key Biscayne
Client's Rep: Natanael Diaz, Project Manager
Completion Date: Dec-20

Project Title: **Lift Station W-27 Upgrade**
Type of Construction: Sewer Pump Station
Contract Amount: \$402,740.01
Type of Contract: Unit Prices
Client: City of Hollywood
Client's Rep: Feng Jian PE, Assistant Director (954)-921-3930
Completion Date: Oct-20

Project Title: **Lift Station No. 103**
Type of Construction: Sewer Pump Stations
Contract Amount: \$873,461.59
Type of Contract: Unit Prices
Client: City of Plantation
Client's Rep: John Adams, Capital Improvement Administrator 954-865-8296
Completion Date: Dec-20

Project Title: **NW 67th Avenue Widening Project**
Type of Construction: Roadway improvements
Contract Amount: \$505,725.93
Type of Contract: Unit Prices
Client: Town of Miami Lakes
Client's Rep: Omar Santos Public Works Engineer (305) 364-6100 Ext.1182
Completion Date: Sept. 2020

Project Title: **Rehabilitation of Wastewater Pump Station No. 12**
Type of Construction: Sewer Pump Station
Contract Amount: \$918,527.09
Type of Contract: Unit Prices
Client: City of North Miami
Client's Rep: Miguel A Lockward, EI, ENV SP (305).265.5420
Completion Date: Sept. 2020

Project Title: **Lift Station 117 and 307 Rehabilitation**
Type of Construction: Sewer Pump Stations
Contract Amount: \$914,313.75
Type of Contract: Unit Prices
Client: City of Sunrise
Client's Rep: Gregg Bagnall 954-888-6097
Completion Date: Jan. 2021

Project Title: **Margate Lift Station 21 Renovation**
Type of Construction: Sewer Pump Station
Contract Amount: \$454,528.88
Type of Contract: Unit Prices
Client: City of Margate
Client's Rep: Keith Schriener (Craig A. Smith & Associates), 954-618-9978
Completion Date: Nov. 2020

Project Title: **High Tide Stormwater Improvements**
Type of Construction: Drainage
Contract Amount: \$131,512.00
Type of Contract: Unit Prices
Client: Town of Golden Beach
Client's Rep: Mr. Orlando Rubio, Senior Supervising Engineer, 561 314 4445, x203
Completion Date: Mar. 2020

Project Title: **State Road 7 Lift Stations (W-12, W-13, W-23 & W-24)**
Type of Construction: Sewer Pump Stations
Contract Amount: \$3,007,950
Type of Contract: Unit Prices
Client: City of Hollywood

Client's Rep: Mr. Feng Jian PE, Assistant Director (954)-921-3930
Completion Date: Mar. 2020

Project Title: **Florida City Water & Sewer Utility Relocation-Adjustments**
Type of Construction: Water and Sewer
Contract Amount: \$323,755
Type of Contract: Unit Prices
Client: City of Florida City
Client's Rep: Pedro Gonzalez PE, City Engineer 786-302-1862
Completion Date: Dec. 2020

Project Title: **Lift Station E-4 Repair Project**
Type of Construction: Sewer Pump Station
Contract Amount: \$204,247.00
Type of Contract: Unit Prices
Client: City of Hollywood
Client's Rep: Mr. Feng Jian PE, Assistant Director (954)-921-3930
Completion Date: Dec. 2019

Project Title: **Pump Stations D-10 & D-11 Flow Analysis and Redesign**
Type of Construction: Sewer Pump Stations
Contract Amount: \$1,026,980
Type of Contract: Unit Prices
Client: City of Fort Lauderdale
Client's Rep: Daniel Fisher, PE, Project Manager 954-632-6487
Completion Date: Feb. 2019

Project Title: **2017 Alley Reconstruction Program**
Type of Construction: Drainage and Roadway Improvements
Contract Amount: \$1,159,138
Type of Contract: Unit Prices
Client: City of Hollywood
Client's Rep: Clarissa Ip Project Manager 954-921-3915
Completion Date: Oct. 2019

Project Title: **Master Lift Station No. 1 Rehabilitation**
Type of Construction: Sewer Pump Station
Contract Amount: \$1,323,689
Type of Contract: Unit Prices
Client: City of Delray Beach
Client's Rep: Richard Chipman, Construction Manager 561-655 6175
Completion Date: July. 2019

Project Title: **Mary Brickell Village Drainage Improvements (Pump Station).**
Type of Construction: Drainage Pump Station
Contract Amount: \$2,576, 882
Type of Contract: Unit Prices
Client: City of Miami
Client's Rep: Valentine Onuigbo, Construction Manager 305-416-2588
Completion Date: Jan. 2019

Project Title: **Tribute Element**
Type of Construction: Drainage and Water Main Improvements
Contract Amount: \$722,213
Type of Contract: Lump Sum
Client: Tutor Perini
Client's Rep: Scott Prince
Completion Date: Jan. 2019

Project Title: **State Road A1A Water Main Improvements**
Type of Construction: Water Main and Roadway Improvements

Contract Amount: \$955,489
Type of Contract: Unit Prices
Client: City of Pompano Beach
Client's Rep: Bradley Wolak, PE Project Manager 954-786-5520
Completion Date: May. 2018

Project Title: **Sanitary Sewer Pump Station D-45 Replacement.**
Type of Construction: Sewer Pump Station
Contract Amount: \$374,534
Type of Contract: Unit Prices
Client: City of Fort Lauderdale
Client's Rep: Maureen Lewis, 954-828 5239
Completion Date: July. 2018

Project Title: **Miscellaneous Roadway & Drainage Services**
Type of Construction: Drainage and Roadway Improvements
Contract Amount: \$769,943
Type of Contract: Unit Prices
Client: City of Miami Lakes
Client's Rep: Carlos Acosta, Public Works Director 305-364 6100
Completion Date: July. 2018

Project Title: **Lift Station 21C Reconstruction and New Force Main**
Type of Construction: Sewer Pump Station and 10" Force Main
Contract Amount: \$986,387
Type of Contract: Unit Prices
Client: City of Coral Springs
Client's Rep: Omar Khan, PE, City Representative 954-510-4700
Completion Date: Feb. 2018

Project Title: **Florida National University**
Type of Construction: Roadway, Drainage, 2" & 3" Water-Main.
Contract Amount: \$550,000
Type of Contract: Unit Prices
Client: Tutor Perini
Client's Rep: David Timpe, Project Manager 954-733-4211
Completion Date: March. 2018

Project Title: **Lauderhill Lift Station 2**
Type of Construction: Sewer Pump Station
Contract Amount: \$677,029
Type of Contract: Unit Prices
Client: City of Lauderhill
Client's Rep: Herb Johnson, Utilities Director, 954-730-4207
Completion Date: Dec. 2017

Project Title: **Margate Water System Atlantic Boulevard Interconnect**
Type of Construction: Water Main Improvements
Contract Amount: \$135,857
Type of Contract: Unit Prices
Client: City of Pompano Beach
Client's Rep: Jeff English
Completion Date: Dec. 2017

Project Title: **Repair Work for City Roads, Streets and Facilities**
Type of Construction: Sidewalk, Drainage and Water Main Improvements
Contract Amount: \$332,156.10
Type of Contract: Unit Prices
Client: City of Aventura
Client's Rep: Anthony Mihalko, Project Manager
Completion Date: Dec. 2017



[Department of State](#) / [Division of Corporations](#) / [Search Records](#) / [Search by Entity Name](#) /

Detail by Entity Name

Florida Profit Corporation

SOUTHEASTERN ENGINEERING CONTRACTORS, INC.

Filing Information

Document Number	M01591
FEI/EIN Number	59-2425850
Date Filed	06/08/1984
State	FL
Status	ACTIVE

Principal Address

911 NW 209TH AVE
STE 101
PEMBROKE PINES, FL 33029

Changed: 01/15/2020

Mailing Address

911 NW 209TH AVE
STE 101
PEMBROKE PINES, FL 33029

Changed: 01/15/2020

Registered Agent Name & Address

File Florida Co.
7000 W. Palmetto Park Rd.
Suite 210
Boca Raton, FL 33433

Name Changed: 01/05/2023

Address Changed: 01/05/2023

Officer/Director Detail

Name & Address

Title President, Director

DOMINGUEZ, EDUARDO, JR.
911 NW 209TH AVE
STE 101

PEMBROKE PINES, FL 33029

Title VP, Secretary, Director

DOMINGUEZ, CYNTHIA

911 NW 209TH AVE

STE 101

PEMBROKE PINES, FL 33029

Annual Reports

Report Year	Filed Date
2021	02/08/2021
2022	01/06/2022
2023	01/05/2023

Document Images

01/05/2023 -- ANNUAL REPORT	View image in PDF format
01/06/2022 -- ANNUAL REPORT	View image in PDF format
02/08/2021 -- ANNUAL REPORT	View image in PDF format
10/22/2020 -- AMENDED ANNUAL REPORT	View image in PDF format
01/15/2020 -- ANNUAL REPORT	View image in PDF format
01/11/2019 -- ANNUAL REPORT	View image in PDF format
01/17/2018 -- ANNUAL REPORT	View image in PDF format
01/11/2017 -- ANNUAL REPORT	View image in PDF format
01/25/2016 -- ANNUAL REPORT	View image in PDF format
03/26/2015 -- AMENDED ANNUAL REPORT	View image in PDF format
01/12/2015 -- ANNUAL REPORT	View image in PDF format
01/14/2014 -- ANNUAL REPORT	View image in PDF format
03/01/2013 -- AMENDED ANNUAL REPORT	View image in PDF format
01/16/2013 -- ANNUAL REPORT	View image in PDF format
05/09/2012 -- Reg. Agent Change	View image in PDF format
01/23/2012 -- ANNUAL REPORT	View image in PDF format
02/17/2011 -- ANNUAL REPORT	View image in PDF format
01/06/2010 -- ANNUAL REPORT	View image in PDF format
02/16/2009 -- ANNUAL REPORT	View image in PDF format
02/07/2008 -- ANNUAL REPORT	View image in PDF format
01/24/2007 -- ANNUAL REPORT	View image in PDF format
04/12/2006 -- ANNUAL REPORT	View image in PDF format
03/30/2005 -- ANNUAL REPORT	View image in PDF format
03/10/2004 -- ANNUAL REPORT	View image in PDF format
04/18/2003 -- ANNUAL REPORT	View image in PDF format
04/18/2002 -- ANNUAL REPORT	View image in PDF format
03/20/2001 -- ANNUAL REPORT	View image in PDF format
04/17/2000 -- ANNUAL REPORT	View image in PDF format
01/28/1999 -- ANNUAL REPORT	View image in PDF format
02/06/1998 -- ANNUAL REPORT	View image in PDF format

04/22/1997 -- ANNUAL REPORT	View image in PDF format
07/03/1996 -- ANNUAL REPORT	View image in PDF format
04/28/1995 -- ANNUAL REPORT	View image in PDF format

1 2 3 4 5 6 7 8 9 10 11 12

Vendor Reference
Previously Used by SEC

FORM 4

VENDOR REFERENCE FORM

City of Hollywood Solicitation #: 039 - 23 - JJ Year 2023 Drainage Infrastructure Imp
 Reference for: Southeastern Engineering Contractors

Organization/Firm Name providing reference: City of Wilton Manors
 Organization/Firm Contact Name: Todo DeJesus Title: Capital Projects Administrator
 Email: tdedej@wiltonmanors.com Phone: 954-390-2105
 Name of Referenced Project: West Side Drainage Contract No: _____
 Date Services were provided: 2021-2022 Project Amount: \$500,000
 Referenced Vendor's role in Project: Prime Vendor Subcontractor/ Subconsultant
 Would you use the Vendor again? Yes No. Please specify in additional comments

Description of services provided by Vendor (provide additional sheet if necessary):
Installation of stormwater drainage system

Please rate your experience with the Vendor	Need Improvement	Satisfactory	Excellent	Not Applicable
Vendor's Quality of Service				
a. Responsive	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Accuracy	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Deliverables	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Vendor's Organization:				
a. Staff expertise	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Professionalism	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Staff turnover	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Timeliness/Cost Control of:				
a. Project	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Deliverables	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Additional Comments (provide additional sheet if necessary): Great to work with!

****THIS SECTION FOR CITY USE ONLY****

Verified via:	Email: <input type="checkbox"/>	Verbal: <input type="checkbox"/>	Mail: <input type="checkbox"/>
Verified by:	Name:		Title:
	Department:		Date:

FORM 4

VENDOR REFERENCE FORM

City of Hollywood Solicitation #: 039 - 23 - JJ Year 2023 Drainage Infrastructure Imp
 Reference for: Southeastern Engineering Contractors

Organization/Firm Name providing reference: City of Opa-locka
 Organization/Firm Contact Name: Carlos Gonzalez Title: Project Manager
 Email: cgonzalez@opalockafl.gov Phone: 305-953-2868 x 1451
 Name of Referenced Project: NW 147th St - Stormwater Improvements Contract No: 2022-09-024
 Date Services were provided: January 2023 - Ongoing Project Amount: \$243,774.00
 Referenced Vendor's role in Project: Prime Vendor Subcontractor/ Subconsultant
 Would you use the Vendor again? Yes No. Please specify in additional comments

Description of services provided by Vendor (provide additional sheet if necessary):
 Safety is SEC's number one priority. The crew works very well together and with City's personnel.
 They keep the job site clean and with the proper MOT in place at all times.
 Excellent communication between project managers.

Please rate your experience with the Vendor	Need Improvement	Satisfactory	Excellent	Not Applicable
Vendor's Quality of Service				
a. Responsive	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Accuracy	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Deliverables	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Vendor's Organization:				
a. Staff expertise	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Professionalism	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Staff turnover	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Timeliness/Cost Control of:				
a. Project	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Deliverables	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Additional Comments (provide additional sheet if necessary):

****THIS SECTION FOR CITY USE ONLY****						
Verified via:	Email:	<input type="checkbox"/>	Verbal:	<input type="checkbox"/>	Mail:	<input type="checkbox"/>
Verified by:	Name:				Title:	
	Department:				Date:	

Vendor Reference
Previously Used by SEC

FORM 4

VENDOR REFERENCE FORM

City of Hollywood Solicitation #: 039 - 23 - JJ Year 2023 Drainage Infrastructure Imp
 Reference for: Southeastern Engineering Contractors

Organization/Firm Name providing reference: City of Fort Lauderdale
 Organization/Firm Contact Name: Sayd Hussain SR Title: Project Manager II
 Email: shussain@fortlauderdale.gov Phone: 954.828.5678
 Name of Referenced Project: Annual Construction of General Stormwater Infrastructure Contract No: 12504-613-5
 Date Services were provided: 6/1/2021 - 6/1/2023 Project Amount: \$1,285,714.29
 Referred Vendor's role in Project: Prime Vendor Subcontractor/ Subconsultant
 Would you use the Vendor again? Yes No. Please specify in additional comments

Description of services provided by Vendor (provide additional sheet if necessary):
Installation of new storm water infrastructure

Please rate your experience with the Vendor	Need Improvement	Satisfactory	Excellent	Not Applicable
Vendor's Quality of Service				
a. Responsive	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Accuracy	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Deliverables	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Vendor's Organization:				
a. Staff expertise	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Professionalism	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Staff turnover	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Timeliness/Cost Control of:				
a. Project	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Deliverables	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Additional Comments (provide additional sheet if necessary):

****THIS SECTION FOR CITY USE ONLY****						
Verified via:	Email:	<input type="checkbox"/>	Verbal:	<input type="checkbox"/>	Mail:	<input type="checkbox"/>
Verified by:	Name:				Title:	
	Department:				Date:	

SWORN STATEMENT PURSUANT TO SECTION 287.133 (3) (a) FLORIDA STATUTES ON PUBLIC ENTITY CRIMES

THIS FORM MUST BE SIGNED AND SWORN TO IN THE PRESENCE OF A NOTARY PUBLIC OR OTHER OFFICIAL AUTHORIZED TO ADMINISTER OATHS

1. This form statement is submitted ~~to~~ the City of Hollywood by Edwardo Dominguez President for Southeastern Engineering Contractors, Inc
(Print individual's name and title) (Print name of entity submitting sworn statement)
whose business address is
911 NW 209th Ave. #101 Pembroke Pines, FL 33025

and if applicable its Federal Employer Identification Number (FEIN) is _____. If the entity has no FEIN, include the Social Security Number of the individual signing this sworn statement.

2. I understand that "public entity crime," as defined in paragraph 287.133(1)(g), Florida Statutes, means a violation of any state or federal law by a person with respect to and directly related to the transaction of business with any public entity or with an agency or political subdivision of any other state or with the United States, including, but not limited to, any bid, proposal, reply, or contract for goods or services, any lease for real property, or any contract for the construction or repair of a public building or public work, involving antitrust, fraud, theft, bribery, collusion, racketeering, conspiracy, or material misinterpretation.
3. I understand that "convicted" or "conviction" as defined in Paragraph 287.133(1)(b), Florida Statutes, means a finding of guilt or a conviction of a public entity crime, with or without an adjudication of guilt, in an federal or state trial court of record relating to charges brought by indictment or information after July 1, 1989, as a result of a jury verdict, nonjury trial, or entry of a plea of guilty or nolo contendere.
4. I understand that "Affiliate," as defined in paragraph 287.133(1)(a), Florida Statutes, means:
1. A predecessor or successor of a person convicted of a public entity crime, or
 2. An entity under the control of any natural person who is active in the management of the entity and who has been convicted of a public entity crime. The term "affiliate" includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in the management of an affiliate. The ownership by one person of shares constituting a controlling interest in another person, or a pooling of equipment or income among persons when not for fair market value under an arm's length agreement, shall be a prima facie case that one person controls another person. A person who knowingly enters into a joint venture with a person who has been convicted of a public entity crime in Florida during the preceding 36 months shall be considered an affiliate.
- 5 I understand that "person," as defined in Paragraph 287.133(1)(e), Florida Statutes, means any natural person or any entity organized under the laws of any state or of the United States with the legal power to enter into a binding contract and which bids or applies to bid on contracts let by a public entity, or which otherwise transacts or applies to transact

business with a public entity. The term "person" includes those officers, executives, partners, shareholders, employees, members, and agents who are active in management of an entity.

6. Based on information and belief, the statement which I have marked below is true in relation to the entity submitting this sworn statement. (Please indicate which statement applies.)

Neither the entity submitting sworn statement, nor any of its officers, director, executives, partners, shareholders, employees, members, or agents who are active in the management of the entity, nor any affiliate of the entity has been charged with and convicted of a public entity crime subsequent to July 1, 1989.

The entity submitting this sworn statement, or one or more of its officers, directors, executives, partners, shareholders, employees, members, or agents who are active in the management of the entity, or an affiliate of the entity, or an affiliate of the entity has been charged with and convicted of a public entity crime subsequent to July 1, 1989.

The entity submitting this sworn statement, or one or more of its officers, directors, executives, partners, shareholders, employees, members, or agents who are active in the management of the entity, or an affiliate of the entity has been charged with and convicted of a public entity crime, but the Final Order entered by the Hearing Officer in a subsequent proceeding before a Hearing Officer of the State of the State of Florida,

Division of Administrative Hearings, determined that it was not in the public interest to place the entity submitting this sworn statement on the convicted vendor list. (attach a copy of the Final Order).

I UNDERSTAND THAT THE SUBMISSION OF THIS FORM TO THE CONTRACTING OFFICER FOR THE PUBLIC ENTITY IDENTIFIED IN PARAGRAPH 1 (ONE) ABOVE IS FOR THAT PUBLIC ENTITY ONLY AND THAT THIS FORM IS VALID THROUGH DECEMBER 31 OF THE CALENDAR YEAR IN WHICH IT IS FILED. I ALSO UNDERSTAND THAT I AM REQUIRED TO INFORM THAT PUBLIC ENTITY PRIOR TO ENTERING INTO A CONTRACT IN EXCESS OF THE THRESHOLD AMOUNT PROVIDED IN SECTION 287.017 FLORIDA STATUTES FOR A CATEGORY TWO OF ANY CHANGE IN THE INFORMATION CONTAINED IN THIS FORM.



(Signature)

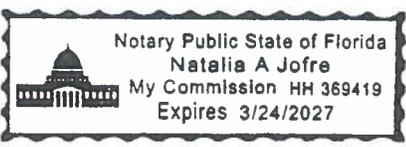
Sworn to and subscribed before me this 25th day of APRIL, 2023.

Personally known EDUARDO DOMINGUEZ

Or produced identification N/A Notary Public-State of Florida

N/A my commission expires 3/24/27
(Type of identification)

(Printed, typed or stamped commissioned name of notary public)



Request for Taxpayer Identification Number and Certification

Give Form to the requester. Do not send to the IRS.

▶ Go to www.irs.gov/FormW9 for instructions and the latest information.

1 Name (as shown on your income tax return). Name is required on this line; do not leave this line blank.

SOUTHEASTERN ENGINEERING CONTRACTORS, INC.

2 Business name/disregarded entity name, if different from above

3 Check appropriate box for federal tax classification of the person whose name is entered on line 1. Check only **one** of the following seven boxes.

Individual/sole proprietor or single-member LLC C Corporation S Corporation Partnership Trust/estate

Limited liability company. Enter the tax classification (C=C corporation, S=S corporation, P=Partnership) ▶ _____

Note: Check the appropriate box in the line above for the tax classification of the single-member owner. Do not check LLC if the LLC is classified as a single-member LLC that is disregarded from the owner unless the owner of the LLC is another LLC that is **not** disregarded from the owner for U.S. federal tax purposes. Otherwise, a single-member LLC that is disregarded from the owner should check the appropriate box for the tax classification of its owner.

Other (see instructions) ▶ _____

4 Exemptions (codes apply only to certain entities, not individuals; see instructions on page 3):

Exempt payee code (if any) _____

Exemption from FATCA reporting code (if any) _____

(Applies to accounts maintained outside the U.S.)

5 Address (number, street, and apt. or suite no.) See instructions.

911 NW 209TH AVE. #101

Requester's name and address (optional)

6 City, state, and ZIP code

PEMBROKE PINES, FL 33029

7 List account number(s) here (optional)

See Specific Instructions on page 3.

Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on line 1 to avoid backup withholding. For individuals, this is generally your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the instructions for Part I, later. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN*, later.

Note: If the account is in more than one name, see the instructions for line 1. Also see *What Name and Number To Give the Requester* for guidelines on whose number to enter.

Social security number								
			-			-		

or

Employer identification number									
5	9	-	2	4	2	5	8	5	0

Part II Certification

Under penalties of perjury, I certify that:

- The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me); and
- I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding; and
- I am a U.S. citizen or other U.S. person (defined below); and
- The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct.

Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions for Part II, later.

Sign Here

Signature of U.S. person ▶

Date ▶

General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

Future developments. For the latest information about developments related to Form W-9 and its instructions, such as legislation enacted after they were published, go to www.irs.gov/FormW9.

Purpose of Form

An individual or entity (Form W-9 requester) who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) which may be your social security number (SSN), individual taxpayer identification number (ITIN), adoption taxpayer identification number (ATIN), or employer identification number (EIN), to report on an information return the amount paid to you, or other amount reportable on an information return. Examples of information returns include, but are not limited to, the following.

- Form 1099-INT (interest earned or paid)

- Form 1099-DIV (dividends, including those from stocks or mutual funds)
- Form 1099-MISC (various types of income, prizes, awards, or gross proceeds)
- Form 1099-B (stock or mutual fund sales and certain other transactions by brokers)
- Form 1099-S (proceeds from real estate transactions)
- Form 1099-K (merchant card and third party network transactions)
- Form 1098 (home mortgage interest), 1098-E (student loan interest), 1098-T (tuition)
- Form 1099-C (canceled debt)
- Form 1099-A (acquisition or abandonment of secured property)

Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN.

If you do not return Form W-9 to the requester with a TIN, you might be subject to backup withholding. See What is backup withholding, later.

By signing the filled-out form, you:

1. Certify that the TIN you are giving is correct (or you are waiting for a number to be issued),
2. Certify that you are not subject to backup withholding, or
3. Claim exemption from backup withholding if you are a U.S. exempt payee. If applicable, you are also certifying that as a U.S. person, your allocable share of any partnership income from a U.S. trade or business is not subject to the withholding tax on foreign partners' share of effectively connected income, and
4. Certify that FATCA code(s) entered on this form (if any) indicating that you are exempt from the FATCA reporting, is correct. See *What is FATCA reporting*, later, for further information.

Note: If you are a U.S. person and a requester gives you a form other than Form W-9 to request your TIN, you must use the requester's form if it is substantially similar to this Form W-9.

Definition of a U.S. person. For federal tax purposes, you are considered a U.S. person if you are:

- An individual who is a U.S. citizen or U.S. resident alien;
- A partnership, corporation, company, or association created or organized in the United States or under the laws of the United States;
- An estate (other than a foreign estate); or
- A domestic trust (as defined in Regulations section 301.7701-7).

Special rules for partnerships. Partnerships that conduct a trade or business in the United States are generally required to pay a withholding tax under section 1446 on any foreign partners' share of effectively connected taxable income from such business. Further, in certain cases where a Form W-9 has not been received, the rules under section 1446 require a partnership to presume that a partner is a foreign person, and pay the section 1446 withholding tax. Therefore, if you are a U.S. person that is a partner in a partnership conducting a trade or business in the United States, provide Form W-9 to the partnership to establish your U.S. status and avoid section 1446 withholding on your share of partnership income.

In the cases below, the following person must give Form W-9 to the partnership for purposes of establishing its U.S. status and avoiding withholding on its allocable share of net income from the partnership conducting a trade or business in the United States.

- In the case of a disregarded entity with a U.S. owner, the U.S. owner of the disregarded entity and not the entity;
- In the case of a grantor trust with a U.S. grantor or other U.S. owner, generally, the U.S. grantor or other U.S. owner of the grantor trust and not the trust; and
- In the case of a U.S. trust (other than a grantor trust), the U.S. trust (other than a grantor trust) and not the beneficiaries of the trust.

Foreign person. If you are a foreign person or the U.S. branch of a foreign bank that has elected to be treated as a U.S. person, do not use Form W-9. Instead, use the appropriate Form W-8 or Form 8233 (see Pub. 515, *Withholding of Tax on Nonresident Aliens and Foreign Entities*).

Nonresident alien who becomes a resident alien. Generally, only a nonresident alien individual may use the terms of a tax treaty to reduce or eliminate U.S. tax on certain types of income. However, most tax treaties contain a provision known as a "saving clause." Exceptions specified in the saving clause may permit an exemption from tax to continue for certain types of income even after the payee has otherwise become a U.S. resident alien for tax purposes.

If you are a U.S. resident alien who is relying on an exception contained in the saving clause of a tax treaty to claim an exemption from U.S. tax on certain types of income, you must attach a statement to Form W-9 that specifies the following five items.

1. The treaty country. Generally, this must be the same treaty under which you claimed exemption from tax as a nonresident alien.
2. The treaty article addressing the income.
3. The article number (or location) in the tax treaty that contains the saving clause and its exceptions.
4. The type and amount of income that qualifies for the exemption from tax.
5. Sufficient facts to justify the exemption from tax under the terms of the treaty article.

Example. Article 20 of the U.S.-China income tax treaty allows an exemption from tax for scholarship income received by a Chinese student temporarily present in the United States. Under U.S. law, this student will become a resident alien for tax purposes if his or her stay in the United States exceeds 5 calendar years. However, paragraph 2 of the first Protocol to the U.S.-China treaty (dated April 30, 1984) allows the provisions of Article 20 to continue to apply even after the Chinese student becomes a resident alien of the United States. A Chinese student who qualifies for this exception (under paragraph 2 of the first protocol) and is relying on this exception to claim an exemption from tax on his or her scholarship or fellowship income would attach to Form W-9 a statement that includes the information described above to support that exemption.

If you are a nonresident alien or a foreign entity, give the requester the appropriate completed Form W-8 or Form 8233.

Backup Withholding

What is backup withholding? Persons making certain payments to you must under certain conditions withhold and pay to the IRS 24% of such payments. This is called "backup withholding." Payments that may be subject to backup withholding include interest, tax-exempt interest, dividends, broker and barter exchange transactions, rents, royalties, nonemployee pay, payments made in settlement of payment card and third party network transactions, and certain payments from fishing boat operators. Real estate transactions are not subject to backup withholding.

You will not be subject to backup withholding on payments you receive if you give the requester your correct TIN, make the proper certifications, and report all your taxable interest and dividends on your tax return.

Payments you receive will be subject to backup withholding if:

1. You do not furnish your TIN to the requester,
2. You do not certify your TIN when required (see the instructions for Part II for details),
3. The IRS tells the requester that you furnished an incorrect TIN,
4. The IRS tells you that you are subject to backup withholding because you did not report all your interest and dividends on your tax return (for reportable interest and dividends only), or
5. You do not certify to the requester that you are not subject to backup withholding under 4 above (for reportable interest and dividend accounts opened after 1983 only).

Certain payees and payments are exempt from backup withholding. See *Exempt payee code*, later, and the separate Instructions for the Requester of Form W-9 for more information.

Also see *Special rules for partnerships*, earlier.

What is FATCA Reporting?

The Foreign Account Tax Compliance Act (FATCA) requires a participating foreign financial institution to report all United States account holders that are specified United States persons. Certain payees are exempt from FATCA reporting. See *Exemption from FATCA reporting code*, later, and the Instructions for the Requester of Form W-9 for more information.

Updating Your Information

You must provide updated information to any person to whom you claimed to be an exempt payee if you are no longer an exempt payee and anticipate receiving reportable payments in the future from this person. For example, you may need to provide updated information if you are a C corporation that elects to be an S corporation, or if you no longer are tax exempt. In addition, you must furnish a new Form W-9 if the name or TIN changes for the account; for example, if the grantor of a grantor trust dies.

Penalties

Failure to furnish TIN. If you fail to furnish your correct TIN to a requester, you are subject to a penalty of \$50 for each such failure unless your failure is due to reasonable cause and not to willful neglect.

Civil penalty for false information with respect to withholding. If you make a false statement with no reasonable basis that results in no backup withholding, you are subject to a \$500 penalty.

Criminal penalty for falsifying information. Willfully falsifying certifications or affirmations may subject you to criminal penalties including fines and/or imprisonment.

Misuse of TINs. If the requester discloses or uses TINs in violation of federal law, the requester may be subject to civil and criminal penalties.

Specific Instructions

Line 1

You must enter one of the following on this line; **do not** leave this line blank. The name should match the name on your tax return.

If this Form W-9 is for a joint account (other than an account maintained by a foreign financial institution (FFI)), list first, and then circle, the name of the person or entity whose number you entered in Part I of Form W-9. If you are providing Form W-9 to an FFI to document a joint account, each holder of the account that is a U.S. person must provide a Form W-9.

a. **Individual.** Generally, enter the name shown on your tax return. If you have changed your last name without informing the Social Security Administration (SSA) of the name change, enter your first name, the last name as shown on your social security card, and your new last name.

Note: ITIN applicant: Enter your individual name as it was entered on your Form W-7 application, line 1a. This should also be the same as the name you entered on the Form 1040/1040A/1040EZ you filed with your application.

b. **Sole proprietor or single-member LLC.** Enter your individual name as shown on your 1040/1040A/1040EZ on line 1. You may enter your business, trade, or "doing business as" (DBA) name on line 2.

c. **Partnership, LLC that is not a single-member LLC, C corporation, or S corporation.** Enter the entity's name as shown on the entity's tax return on line 1 and any business, trade, or DBA name on line 2.

d. **Other entities.** Enter your name as shown on required U.S. federal tax documents on line 1. This name should match the name shown on the charter or other legal document creating the entity. You may enter any business, trade, or DBA name on line 2.

e. **Disregarded entity.** For U.S. federal tax purposes, an entity that is disregarded as an entity separate from its owner is treated as a "disregarded entity." See Regulations section 301.7701-2(c)(2)(iii). Enter the owner's name on line 1. The name of the entity entered on line 1 should never be a disregarded entity. The name on line 1 should be the name shown on the income tax return on which the income should be reported. For example, if a foreign LLC that is treated as a disregarded entity for U.S. federal tax purposes has a single owner that is a U.S. person, the U.S. owner's name is required to be provided on line 1. If the direct owner of the entity is also a disregarded entity, enter the first owner that is not disregarded for federal tax purposes. Enter the disregarded entity's name on line 2, "Business name/disregarded entity name." If the owner of the disregarded entity is a foreign person, the owner must complete an appropriate Form W-8 instead of a Form W-9. This is the case even if the foreign person has a U.S. TIN.

Line 2

If you have a business name, trade name, DBA name, or disregarded entity name, you may enter it on line 2.

Line 3

Check the appropriate box on line 3 for the U.S. federal tax classification of the person whose name is entered on line 1. Check only one box on line 3.

IF the entity/person on line 1 is a(n) . . .	THEN check the box for . . .
• Corporation	Corporation
• Individual • Sole proprietorship, or • Single-member limited liability company (LLC) owned by an individual and disregarded for U.S. federal tax purposes.	Individual/sole proprietor or single-member LLC
• LLC treated as a partnership for U.S. federal tax purposes, • LLC that has filed Form 8832 or 2553 to be taxed as a corporation, or • LLC that is disregarded as an entity separate from its owner but the owner is another LLC that is not disregarded for U.S. federal tax purposes.	Limited liability company and enter the appropriate tax classification. (P= Partnership; C= C corporation; or S= S corporation)
• Partnership	Partnership
• Trust/estate	Trust/estate

Line 4, Exemptions

If you are exempt from backup withholding and/or FATCA reporting, enter in the appropriate space on line 4 any code(s) that may apply to you.

Exempt payee code.

- Generally, individuals (including sole proprietors) are not exempt from backup withholding.
- Except as provided below, corporations are exempt from backup withholding for certain payments, including interest and dividends.
- Corporations are not exempt from backup withholding for payments made in settlement of payment card or third party network transactions.
- Corporations are not exempt from backup withholding with respect to attorneys' fees or gross proceeds paid to attorneys, and corporations that provide medical or health care services are not exempt with respect to payments reportable on Form 1099-MISC.

The following codes identify payees that are exempt from backup withholding. Enter the appropriate code in the space in line 4.

- 1—An organization exempt from tax under section 501(a), any IRA, or a custodial account under section 403(b)(7) if the account satisfies the requirements of section 401(f)(2)
- 2—The United States or any of its agencies or instrumentalities
- 3—A state, the District of Columbia, a U.S. commonwealth or possession, or any of their political subdivisions or instrumentalities
- 4—A foreign government or any of its political subdivisions, agencies, or instrumentalities
- 5—A corporation
- 6—A dealer in securities or commodities required to register in the United States, the District of Columbia, or a U.S. commonwealth or possession
- 7—A futures commission merchant registered with the Commodity Futures Trading Commission
- 8—A real estate investment trust
- 9—An entity registered at all times during the tax year under the Investment Company Act of 1940
- 10—A common trust fund operated by a bank under section 584(a)
- 11—A financial institution
- 12—A middleman known in the investment community as a nominee or custodian
- 13—A trust exempt from tax under section 664 or described in section 4947

The following chart shows types of payments that may be exempt from backup withholding. The chart applies to the exempt payees listed above, 1 through 13.

IF the payment is for . . .	THEN the payment is exempt for . . .
Interest and dividend payments	All exempt payees except for 7
Broker transactions	Exempt payees 1 through 4 and 6 through 11 and all C corporations. S corporations must not enter an exempt payee code because they are exempt only for sales of noncovered securities acquired prior to 2012.
Barter exchange transactions and patronage dividends	Exempt payees 1 through 4
Payments over \$600 required to be reported and direct sales over \$5,000 ¹	Generally, exempt payees 1 through 5 ²
Payments made in settlement of payment card or third party network transactions	Exempt payees 1 through 4

¹ See Form 1099-MISC, Miscellaneous Income, and its instructions.

² However, the following payments made to a corporation and reportable on Form 1099-MISC are not exempt from backup withholding: medical and health care payments, attorneys' fees, gross proceeds paid to an attorney reportable under section 6045(f), and payments for services paid by a federal executive agency.

Exemption from FATCA reporting code. The following codes identify payees that are exempt from reporting under FATCA. These codes apply to persons submitting this form for accounts maintained outside of the United States by certain foreign financial institutions. Therefore, if you are only submitting this form for an account you hold in the United States, you may leave this field blank. Consult with the person requesting this form if you are uncertain if the financial institution is subject to these requirements. A requester may indicate that a code is not required by providing you with a Form W-9 with "Not Applicable" (or any similar indication) written or printed on the line for a FATCA exemption code.

A—An organization exempt from tax under section 501(a) or any individual retirement plan as defined in section 7701(a)(37)

B—The United States or any of its agencies or instrumentalities

C—A state, the District of Columbia, a U.S. commonwealth or possession, or any of their political subdivisions or instrumentalities

D—A corporation the stock of which is regularly traded on one or more established securities markets, as described in Regulations section 1.1472-1(c)(1)(i)

E—A corporation that is a member of the same expanded affiliated group as a corporation described in Regulations section 1.1472-1(c)(1)(i)

F—A dealer in securities, commodities, or derivative financial instruments (including notional principal contracts, futures, forwards, and options) that is registered as such under the laws of the United States or any state

G—A real estate investment trust

H—A regulated investment company as defined in section 851 or an entity registered at all times during the tax year under the Investment Company Act of 1940

I—A common trust fund as defined in section 584(a)

J—A bank as defined in section 581

K—A broker

L—A trust exempt from tax under section 664 or described in section 4947(a)(1)

M—A tax exempt trust under a section 403(b) plan or section 457(g) plan

Note: You may wish to consult with the financial institution requesting this form to determine whether the FATCA code and/or exempt payee code should be completed.

Line 5

Enter your address (number, street, and apartment or suite number). This is where the requester of this Form W-9 will mail your information returns. If this address differs from the one the requester already has on file, write NEW at the top. If a new address is provided, there is still a chance the old address will be used until the payor changes your address in their records.

Line 6

Enter your city, state, and ZIP code.

Part I. Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. If you are a resident alien and you do not have and are not eligible to get an SSN, your TIN is your IRS individual taxpayer identification number (ITIN). Enter it in the social security number box. If you do not have an ITIN, see *How to get a TIN* below.

If you are a sole proprietor and you have an EIN, you may enter either your SSN or EIN.

If you are a single-member LLC that is disregarded as an entity separate from its owner, enter the owner's SSN (or EIN, if the owner has one). Do not enter the disregarded entity's EIN. If the LLC is classified as a corporation or partnership, enter the entity's EIN.

Note: See *What Name and Number To Give the Requester*, later, for further clarification of name and TIN combinations.

How to get a TIN. If you do not have a TIN, apply for one immediately. To apply for an SSN, get Form SS-5, Application for a Social Security Card, from your local SSA office or get this form online at www.SSA.gov. You may also get this form by calling 1-800-772-1213. Use Form W-7, Application for IRS Individual Taxpayer Identification Number, to apply for an ITIN, or Form SS-4, Application for Employer Identification Number, to apply for an EIN. You can apply for an EIN online by accessing the IRS website at www.irs.gov/Businesses and clicking on Employer Identification Number (EIN) under Starting a Business. Go to www.irs.gov/Forms to view, download, or print Form W-7 and/or Form SS-4. Or, you can go to www.irs.gov/OrderForms to place an order and have Form W-7 and/or SS-4 mailed to you within 10 business days.

If you are asked to complete Form W-9 but do not have a TIN, apply for a TIN and write "Applied For" in the space for the TIN, sign and date the form, and give it to the requester. For interest and dividend payments, and certain payments made with respect to readily tradable instruments, generally you will have 60 days to get a TIN and give it to the requester before you are subject to backup withholding on payments. The 60-day rule does not apply to other types of payments. You will be subject to backup withholding on all such payments until you provide your TIN to the requester.

Note: Entering "Applied For" means that you have already applied for a TIN or that you intend to apply for one soon.

Caution: A disregarded U.S. entity that has a foreign owner must use the appropriate Form W-8.

Part II. Certification

To establish to the withholding agent that you are a U.S. person, or resident alien, sign Form W-9. You may be requested to sign by the withholding agent even if item 1, 4, or 5 below indicates otherwise.

For a joint account, only the person whose TIN is shown in Part I should sign (when required). In the case of a disregarded entity, the person identified on line 1 must sign. Exempt payees, see *Exempt payee code*, earlier.

Signature requirements. Complete the certification as indicated in items 1 through 5 below.

1. Interest, dividend, and barter exchange accounts opened before 1984 and broker accounts considered active during 1983. You must give your correct TIN, but you do not have to sign the certification.

2. Interest, dividend, broker, and barter exchange accounts opened after 1983 and broker accounts considered inactive during 1983. You must sign the certification or backup withholding will apply. If you are subject to backup withholding and you are merely providing your correct TIN to the requester, you must cross out item 2 in the certification before signing the form.

3. Real estate transactions. You must sign the certification. You may cross out item 2 of the certification.

4. Other payments. You must give your correct TIN, but you do not have to sign the certification unless you have been notified that you have previously given an incorrect TIN. "Other payments" include payments made in the course of the requester's trade or business for rents, royalties, goods (other than bills for merchandise), medical and health care services (including payments to corporations), payments to a nonemployee for services, payments made in settlement of payment card and third party network transactions, payments to certain fishing boat crew members and fishermen, and gross proceeds paid to attorneys (including payments to corporations).

5. Mortgage interest paid by you, acquisition or abandonment of secured property, cancellation of debt, qualified tuition program payments (under section 529), ABLÉ accounts (under section 529A), IRA, Coverdell ESA, Archer MSA or HSA contributions or distributions, and pension distributions. You must give your correct TIN, but you do not have to sign the certification.

What Name and Number To Give the Requester

For this type of account:	Give name and SSN of:
1. Individual	The individual
2. Two or more individuals (joint account) other than an account maintained by an FFI	The actual owner of the account or, if combined funds, the first individual on the account ¹
3. Two or more U.S. persons (joint account maintained by an FFI)	Each holder of the account
4. Custodial account of a minor (Uniform Gift to Minors Act)	The minor ²
5. a. The usual revocable savings trust (grantor is also trustee) b. So-called trust account that is not a legal or valid trust under state law	The grantor-trustee ¹ The actual owner ¹
6. Sole proprietorship or disregarded entity owned by an individual	The owner ³
7. Grantor trust filing under Optional Form 1099 Filing Method 1 (see Regulations section 1.671-4(b)(2)(i)(A))	The grantor ⁴

For this type of account:	Give name and EIN of:
8. Disregarded entity not owned by an individual	The owner
9. A valid trust, estate, or pension trust	Legal entity ⁴
10. Corporation or LLC electing corporate status on Form 8832 or Form 2553	The corporation
11. Association, club, religious, charitable, educational, or other tax-exempt organization	The organization
12. Partnership or multi-member LLC	The partnership
13. A broker or registered nominee	The broker or nominee

For this type of account:	Give name and EIN of:
14. Account with the Department of Agriculture in the name of a public entity (such as a state or local government, school district, or prison) that receives agricultural program payments	The public entity
15. Grantor trust filing under the Form 1041 Filing Method or the Optional Form 1099 Filing Method 2 (see Regulations section 1.671-4(b)(2)(i)(B))	The trust

¹ List first and circle the name of the person whose number you furnish. If only one person on a joint account has an SSN, that person's number must be furnished.

² Circle the minor's name and furnish the minor's SSN.

³ You must show your individual name and you may also enter your business or DBA name on the "Business name/disregarded entity" name line. You may use either your SSN or EIN (if you have one), but the IRS encourages you to use your SSN.

⁴ List first and circle the name of the trust, estate, or pension trust. (Do not furnish the TIN of the personal representative or trustee unless the legal entity itself is not designated in the account title.) Also see *Special rules for partnerships*, earlier.

***Note:** The grantor also must provide a Form W-9 to trustee of trust.

Note: If no name is circled when more than one name is listed, the number will be considered to be that of the first name listed.

Secure Your Tax Records From Identity Theft

Identity theft occurs when someone uses your personal information such as your name, SSN, or other identifying information, without your permission, to commit fraud or other crimes. An identity thief may use your SSN to get a job or may file a tax return using your SSN to receive a refund.

To reduce your risk:

- Protect your SSN,
- Ensure your employer is protecting your SSN, and
- Be careful when choosing a tax preparer.

If your tax records are affected by identity theft and you receive a notice from the IRS, respond right away to the name and phone number printed on the IRS notice or letter.

If your tax records are not currently affected by identity theft but you think you are at risk due to a lost or stolen purse or wallet, questionable credit card activity or credit report, contact the IRS Identity Theft Hotline at 1-800-908-4490 or submit Form 14039.

For more information, see Pub. 5027, Identity Theft Information for Taxpayers.

Victims of identity theft who are experiencing economic harm or a systemic problem, or are seeking help in resolving tax problems that have not been resolved through normal channels, may be eligible for Taxpayer Advocate Service (TAS) assistance. You can reach TAS by calling the TAS toll-free case intake line at 1-877-777-4778 or TTY/TDD 1-800-829-4059.

Protect yourself from suspicious emails or phishing schemes.

Phishing is the creation and use of email and websites designed to mimic legitimate business emails and websites. The most common act is sending an email to a user falsely claiming to be an established legitimate enterprise in an attempt to scam the user into surrendering private information that will be used for identity theft.

The IRS does not initiate contacts with taxpayers via emails. Also, the IRS does not request personal detailed information through email or ask taxpayers for the PIN numbers, passwords, or similar secret access information for their credit card, bank, or other financial accounts.

If you receive an unsolicited email claiming to be from the IRS, forward this message to phishing@irs.gov. You may also report misuse of the IRS name, logo, or other IRS property to the Treasury Inspector General for Tax Administration (TIGTA) at 1-800-366-4484. You can forward suspicious emails to the Federal Trade Commission at spam@uce.gov or report them at www.ftc.gov/complaint. You can contact the FTC at www.ftc.gov/idtheft or 877-IDTHEFT (877-438-4338). If you have been the victim of identity theft, see www.IdentityTheft.gov and Pub. 5027.

Visit www.irs.gov/IdentityTheft to learn more about identity theft and how to reduce your risk.

Privacy Act Notice

Section 6109 of the Internal Revenue Code requires you to provide your correct TIN to persons (including federal agencies) who are required to file information returns with the IRS to report interest, dividends, or certain other income paid to you; mortgage interest you paid; the acquisition or abandonment of secured property; the cancellation of debt; or contributions you made to an IRA, Archer MSA, or HSA. The person collecting this form uses the information on the form to file information returns with the IRS, reporting the above information. Routine uses of this information include giving it to the Department of Justice for civil and criminal litigation and to cities, states, the District of Columbia, and U.S. commonwealths and possessions for use in administering their laws. The information also may be disclosed to other countries under a treaty, to federal and state agencies to enforce civil and criminal laws, or to federal law enforcement and intelligence agencies to combat terrorism. You must provide your TIN whether or not you are required to file a tax return. Under section 3406, payers must generally withhold a percentage of taxable interest, dividend, and certain other payments to a payee who does not give a TIN to the payer. Certain penalties may also apply for providing false or fraudulent information.

FORM 12

TRENCH SAFETY

This form must be completed and signed by the Respondent.

Failure to complete this form may result in the solicitation being declared non-responsive.

Respondent acknowledges that the Florida Trench Safety Act, Section 553.60 et. seq., which became effective October 1, 1990, shall be in effect during the period of construction of the project. The respondent by signing and submitting the solicitation is, in writing, assuring that it will perform any trench excavation in accordance with applicable trench safety standards. The respondent further identifies the following separate item of cost of compliance with the applicable trench safety standards as well as the method of compliance:

Method of Compliance

Cost

Trench Box

Total \$ 20 / LP

Respondent acknowledges that this cost is included in the applicable items of their submittal and in the Grand Total Solicitation Price. Failure to complete the above will result in the solicitation being declared non-responsive.

The Respondent is, and the Owner and Engineer are not, responsible to review or assess Respondent's safety precautions, programs or costs, or the means, methods, techniques or technique adequacy, reasonableness of cost, sequences or procedures of any safety precaution, program or cost, including but not limited to, compliance with any and all requirements of Florida Statute Section 553.60 et. seq. cited as the "Trench Safety Act." Respondent is, and the owner and Engineer are not, responsible to determine if any safety related standards apply to the project, including but not limited to, the "Trench Safety Act."



Witness Signature

Joe C Peulle

Witness Printed Name

911 NW 209th Ave. #101 Pembroke Pines, FL 33025

Witness Address

09/22/2023

Date



Contractor's Signature

Edward Dominguez

Printed Name

President

Title

09/22/2023

Date

- END OF SECTION -

Approved SOLICITATION Bond

In the event of the withdrawal of said SOLICITATION within the specified period, or the failure to enter into such contract and give such bond and insurance within the specified time, the principal and the surety shall pay to the City of Hollywood the difference between the amount specified in said SOLICITATION and such larger amount for which the City of Hollywood may in good faith contract with another party to perform the work and/or supply the materials covered by said SOLICITATION.

IN WITNESS WHEREOF, the above bound parties have executed this statement under their several seals this 26th day of April, 2023, the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

WHEN THE PRINCIPAL IS AN INDIVIDUAL:

Signed, sealed and delivered in the presence of:

Witness

Signature of Individual

Address

Printed Name of Individual

Witness

Address

Approved SOLICITATION Bond

WHEN THE PRINCIPAL IS A CORPORATION:

Attest:

Secretary

Southeastern Engineering Contractors, Inc.
Name of Corporation

Business Address
911 NW 209 Ave Ste 101
Pembroke Pines, FL 33029

By: 
(Affix Corporate Seal)

Eduardo Dominguez
Printed Name

President
Official Title

CERTIFICATE AS TO CORPORATE PRINCIPAL

I, _____, certify that I am the secretary of the Corporation named as Principal in the attached bond; that Eduardo Dominguez _____ who signed the said bond on behalf of the Principal, was then President _____ of said Corporation; that I know his signature, and his signature thereto is genuine and that said bond was duly signed, sealed and attested for and on behalf of said Corporation by authority of its governing body.

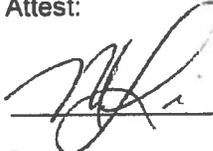


Secretary (SEAL)

Approved SOLICITATION Bond

TO BE EXECUTED BY CORPORATE SURETY:

Attest:



Secretary
Maria Li

FCCI Insurance Company
Corporate Surety

Business Address
6300 University Parkway
Sarasota, FL 34240



BY: 
_____ (Affix Corporate Seal)


Ramon A Rodriguez
Attorney-in-Fact

Name of Local Agency
Brown & Brown Miami Dade

8825 NW 21st Terrace, Doral, FL 33172
Business Address

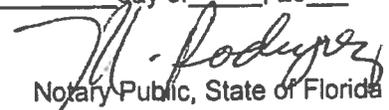
STATE OF FLORIDA

Before me, a Notary Public, duly commissioned, qualified and acting, personally appeared,

Ramon A Rodriguez to me well known, who being by me first duly sworn upon
oath says that he is the attorney-in-fact for the
FCCI Insurance Company and

that he has been authorized by Power of Attorney to execute the forgoing
bond on behalf of the CONTRACTOR named therein in favor of the City of Hollywood, Florida.

Subscribed and sworn to before me this 26th day of April, 2023


Notary Public, State of Florida

My Commission Expires:

- END OF SECTION-



MAYRA RODRIGUEZ
Commission # HH 315319
Expires November 14, 2026



GENERAL POWER OF ATTORNEY

Know all men by these presents: That the FCCI Insurance Company, a Corporation organized and existing under the laws of the State of Florida (the "Corporation") does make, constitute and appoint:

Ramon A. Rodriguez; Mayra Rodriguez; Fausto Alvarez, Jr.

Each, its true and lawful Attorney-In-Fact, to make, execute, seal and deliver, for and on its behalf as surety, and as its act and deed in all bonds and undertakings provided that no bond or undertaking or contract of suretyship executed under this authority shall exceed the sum of (not to exceed \$20,000,000.00): **\$20,000,000.00**

This Power of Attorney is made and executed by authority of a Resolution adopted by the Board of Directors. That resolution also authorized any further action by the officers of the Company necessary to effect such transaction.

The signatures below and the seal of the Corporation may be affixed by facsimile, and any such facsimile signatures or facsimile seal shall be binding upon the Corporation when so affixed and in the future with regard to any bond, undertaking or contract of surety to which it is attached.

In witness whereof, the FCCI Insurance Company has caused these presents to be signed by its duly authorized officers and its corporate Seal to be hereunto affixed, this 23rd day of July, 2020.

Attest: Christina D. Welch
Christina D. Welch, President
FCCI Insurance Company



Christopher Shoucair
Christopher Shoucair,
EVP, CFO, Treasurer, Secretary
FCCI Insurance Company

State of Florida
County of Sarasota

Before me this day personally appeared Christina D. Welch, who is personally known to me and who executed the foregoing document for the purposes expressed therein.

My commission expires: 2/27/2027



PEGGY SNOW
Commission # HH 126536
Expires February 27, 2027

Peggy Snow
Notary Public

State of Florida
County of Sarasota

Before me this day personally appeared Christopher Shoucair, who is personally known to me and who executed the foregoing document for the purposes expressed therein.

My commission expires: 2/27/2027



PEGGY SNOW
Commission # HH 126536
Expires February 27, 2027

Peggy Snow
Notary Public

CERTIFICATE

I, the undersigned Secretary of FCCI Insurance Company, a Florida Corporation, DO HEREBY CERTIFY that the foregoing Power of Attorney remains in full force and has not been revoked; and furthermore that the February 27, 2020 Resolution of the Board of Directors, referenced in said Power of Attorney, is now in force.

Dated this 26th day of April, 2023

Christopher Shoucair
Christopher Shoucair, EVP, CFO, Treasurer, Secretary
FCCI Insurance Company

Form 14

LIST OF SUBCONTRACTORS

The Respondent shall list below the name and address of each Subcontractor who will perform work under this Contract, and shall also list the portion of the work which will be done by such Subcontractor. After the opening of Submittals, changes or substitutions will be allowed with written approval of the City of Hollywood. Subcontractors must be properly licensed.

	Work to be Performed	Subcontractor's Name / Address
1.	<u>Asphalt</u>	<u>Arrow Asphalt & Eng.</u>
2.	_____	<u>Shawn Ode 3050 NW 129 ST Opa loka</u>
3.	<u>Cleaning - vac truck</u>	<u>Flo Tech Environmental Joe Ferri'</u>
4.	_____	<u>657 South Drive, Suite #461 Miami Springs</u>
5.	_____	_____
6.	_____	_____
7.	_____	_____
8.	_____	_____
9.	_____	_____
10.	_____	_____

NOTE: Attach additional sheets if required.

- END OF SECTION -



CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

9/23/2022

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Bowen, Miclette & Britt of Florida, LLC 850 Concourse Pkwy S, Suite #105 Maitland FL 32751	CONTACT NAME: Michelle Rushing PHONE (A/C. No. Ext): 407-647-1616 E-MAIL ADDRESS: mrushing@bmbinc.com		FAX (A/C. No.): 407-628-1635													
	<table border="1"> <thead> <tr> <th>INSURER(S) AFFORDING COVERAGE</th> <th>NAIC #</th> </tr> </thead> <tbody> <tr> <td>INSURER A : Charter Oak Fire Ins. Co.</td> <td>25615</td> </tr> <tr> <td>INSURER B : Travelers Indemnity Company</td> <td>26658</td> </tr> <tr> <td>INSURER C : Travelers Property Casualty Co of Amer</td> <td>25674</td> </tr> <tr> <td>INSURER D : Bridgefield Casualty Insurance Company</td> <td>10335</td> </tr> <tr> <td>INSURER E :</td> <td></td> </tr> <tr> <td>INSURER F :</td> <td></td> </tr> </tbody> </table>			INSURER(S) AFFORDING COVERAGE	NAIC #	INSURER A : Charter Oak Fire Ins. Co.	25615	INSURER B : Travelers Indemnity Company	26658	INSURER C : Travelers Property Casualty Co of Amer	25674	INSURER D : Bridgefield Casualty Insurance Company	10335	INSURER E :		INSURER F :
INSURER(S) AFFORDING COVERAGE	NAIC #															
INSURER A : Charter Oak Fire Ins. Co.	25615															
INSURER B : Travelers Indemnity Company	26658															
INSURER C : Travelers Property Casualty Co of Amer	25674															
INSURER D : Bridgefield Casualty Insurance Company	10335															
INSURER E :																
INSURER F :																
INSURED Southeastern Engineering Contractors, Inc. 911 NW 209th Ave., Ste. 101 Pembroke Pines FL 33029	SOUTHEASTE11															

COVERAGES

CERTIFICATE NUMBER: 1503440098

REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input checked="" type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC <input type="checkbox"/> OTHER:	Y	Y	DT-CO-7T598390-COF-22	9/22/2022	9/22/2023	EACH OCCURRENCE	\$ 1,000,000
							DAMAGE TO RENTED PREMISES (Ea occurrence)	\$ 300,000
							MED EXP (Any one person)	\$ 5,000
							PERSONAL & ADV INJURY	\$ 1,000,000
							GENERAL AGGREGATE	\$ 2,000,000
							PRODUCTS - COMP/OP AGG	\$ 2,000,000
								\$
B	<input checked="" type="checkbox"/> AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO <input type="checkbox"/> OWNED AUTOS ONLY <input type="checkbox"/> SCHEDULED AUTOS <input checked="" type="checkbox"/> HIRED AUTOS ONLY <input checked="" type="checkbox"/> NON-OWNED AUTOS ONLY	Y	Y	BA-7T59913A-22-26-G	9/22/2022	9/22/2023	COMBINED SINGLE LIMIT (Ea accident)	\$ 1,000,000
							BODILY INJURY (Per person)	\$
							BODILY INJURY (Per accident)	\$
							PROPERTY DAMAGE (Per accident)	\$
								\$
C	<input checked="" type="checkbox"/> UMBRELLA LIAB <input checked="" type="checkbox"/> OCCUR <input type="checkbox"/> EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE <input type="checkbox"/> DED <input checked="" type="checkbox"/> RETENTION \$ 10,000	Y	Y	CUP-7T606799-22-26	9/22/2022	9/22/2023	EACH OCCURRENCE	\$ 2,000,000
							AGGREGATE	\$ 2,000,000
								\$
D	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	Y/N	N/A	0196-56073	9/22/2022	9/22/2023	<input checked="" type="checkbox"/> PER STATUTE <input type="checkbox"/> OTH-ER	
							E.L. EACH ACCIDENT	\$ 1,000,000
							E.L. DISEASE - EA EMPLOYEE	\$ 1,000,000
							E.L. DISEASE - POLICY LIMIT	\$ 1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

The following policy provisions and/or endorsements form part of the policies of insurance represented by this certificate of insurance. The terms contained in the policies and/or endorsements supersede the representations made herein. Electronic copies of the policy provisions and/or endorsements listed below are available by emailing Contact Person as shown above.

When required by written contract, those parties listed in said contract, including the Certificate Holder, are added as an Additional Insureds with respect to the General Liability, Auto Liability and Umbrella Liability as afforded by the policy and/or endorsements.

When required by written contract, a Waiver of Subrogation, with respect to the General Liability, Auto Liability, Worker's Compensation and Umbrella is granted See Attached...

CERTIFICATE HOLDER**CANCELLATION**

City of Hollywood
 2600 Hollywood Blvd
 Hollywood FL 33022

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

© 1988-2015 ACORD CORPORATION. All rights reserved.



ADDITIONAL REMARKS SCHEDULE

AGENCY Bowen, Miclette & Britt of Florida, LLC		NAMED INSURED Southeastern Engineering Contractors, Inc. 911 NW 209th Ave., Ste. 101 Pembroke Pines FL 33029	
POLICY NUMBER		EFFECTIVE DATE:	
CARRIER	NAIC CODE		

ADDITIONAL REMARKS

THIS ADDITIONAL REMARKS FORM IS A SCHEDULE TO ACORD FORM,
FORM NUMBER: 25 **FORM TITLE:** CERTIFICATE OF LIABILITY INSURANCE

to those parties listed in said contract, including the Certificate Holder.

The General Liability, Auto Liability, and Umbrella Liability, certified herein are primary and non-contributory to other insurance available, but only to the extent required by written contract.

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

BLANKET ADDITIONAL INSURED – AUTOMATIC STATUS IF REQUIRED BY WRITTEN CONTRACT (CONTRACTORS)

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART

The following is added to **SECTION II – WHO IS AN INSURED**:

Any person or organization that:

- a. You agree in a written contract or agreement to include as an additional insured on this Coverage Part; and
- b. Has not been added as an additional insured for the same project by attachment of an endorsement under this Coverage Part which includes such person or organization in the endorsement's schedule;

is an insured, but:

- a. Only with respect to liability for "bodily injury" or "property damage" that occurs, or for "personal injury" caused by an offense that is committed, subsequent to the signing of that contract or agreement and while that part of the contract or agreement is in effect; and
- b. Only as described in Paragraph (1), (2) or (3) below, whichever applies:
 - (1) If the written contract or agreement specifically requires you to provide additional insured coverage to that person or organization by the use of:
 - (a) The Additional Insured – Owners, Lessees or Contractors – (Form B) endorsement CG 20 10 11 85; or
 - (b) Either or both of the following: the Additional Insured – Owners, Lessees or Contractors – Scheduled Person Or Organization endorsement CG 20 10 10 01, or the Additional Insured – Owners, Lessees or Contractors – Completed Operations endorsement CG 20 37 10 01;

the person or organization is an additional insured only if the injury or damage arises out of "your work" to which the written contract or agreement applies;

- (2) If the written contract or agreement specifically requires you to provide additional insured coverage to that person or organization by the use of:

- (a) The Additional Insured – Owners, Lessees or Contractors – Scheduled Person or Organization endorsement CG 20 10 07 04 or CG 20 10 04 13, the Additional Insured – Owners, Lessees or Contractors – Completed Operations endorsement CG 20 37 07 04 or CG 20 37 04 13, or both of such endorsements with either of those edition dates; or

- (b) Either or both of the following: the Additional Insured – Owners, Lessees or Contractors – Scheduled Person Or Organization endorsement CG 20 10, or the Additional Insured – Owners, Lessees or Contractors – Completed Operations endorsement CG 20 37, without an edition date of such endorsement specified;

the person or organization is an additional insured only if the injury or damage is caused, in whole or in part, by acts or omissions of you or your subcontractor in the performance of "your work" to which the written contract or agreement applies; or

- (3) If neither Paragraph (1) nor (2) above applies:
 - (a) The person or organization is an additional insured only if, and to the extent that, the injury or damage is caused by acts or omissions of you or your subcontractor in the performance of "your work" to which the written contract or agreement applies; and
 - (b) Such person or organization does not qualify as an additional insured with respect to the independent acts or omissions of such person or organization.

The insurance provided to such additional insured is subject to the following provisions:

- a. If the Limits of Insurance of this Coverage Part shown in the Declarations exceed the minimum limits required by the written contract or agreement, the insurance provided to the additional insured will be limited to such minimum required limits. For the purposes of determining whether

COMMERCIAL GENERAL LIABILITY

this limitation applies, the minimum limits required by the written contract or agreement will be considered to include the minimum limits of any Umbrella or Excess liability coverage required for the additional insured by that written contract or agreement. This provision will not increase the limits of insurance described in Section III – Limits Of Insurance.

b. The insurance provided to such additional insured does not apply to:

(1) Any "bodily injury", "property damage" or "personal injury" arising out of the providing, or failure to provide, any professional architectural, engineering or surveying services, including:

(a) The preparing, approving, or failing to prepare or approve, maps, shop drawings, opinions, reports, surveys, field orders or change orders, or the preparing, approving, or failing to prepare or approve, drawings and specifications; and

(b) Supervisory, inspection, architectural or engineering activities.

(2) Any "bodily injury" or "property damage" caused by "your work" and included in the "products-completed operations hazard" unless the written contract or agreement specifically requires you to provide such coverage for that additional insured during the policy period.

c. The additional insured must comply with the following duties:

(1) Give us written notice as soon as practicable of an "occurrence" or an offense which may

result in a claim. To the extent possible, such notice should include:

(a) How, when and where the "occurrence" or offense took place;

(b) The names and addresses of any injured persons and witnesses; and

(c) The nature and location of any injury or damage arising out of the "occurrence" or offense.

(2) If a claim is made or "suit" is brought against the additional insured:

(a) Immediately record the specifics of the claim or "suit" and the date received; and

(b) Notify us as soon as practicable and see to it that we receive written notice of the claim or "suit" as soon as practicable.

(3) Immediately send us copies of all legal papers received in connection with the claim or "suit", cooperate with us in the investigation or settlement of the claim or defense against the "suit", and otherwise comply with all policy conditions.

(4) Tender the defense and indemnity of any claim or "suit" to any provider of other insurance which would cover such additional insured for a loss we cover. However, this condition does not affect whether the insurance provided to such additional insured is primary to other insurance available to such additional insured which covers that person or organization as a named insured as described in Paragraph 4., Other Insurance, of Section IV – Commercial General Liability Conditions.

COMMERCIAL GENERAL LIABILITY COVERAGE FORM

Various provisions in this policy restrict coverage. Read the entire policy carefully to determine rights, duties and what is and is not covered.

Throughout this policy the words "you" and "your" refer to the Named Insured shown in the Declarations, and any other person or organization qualifying as a Named Insured under this policy. The words "we", "us" and "our" refer to the company providing this insurance.

The word "insured" means any person or organization qualifying as such under Section II – Who Is An Insured.

Other words and phrases that appear in quotation marks have special meaning. Refer to Section V – Definitions.

SECTION I – COVERAGES

COVERAGE A – BODILY INJURY AND PROPERTY DAMAGE LIABILITY

1. Insuring Agreement

a. We will pay those sums that the insured becomes legally obligated to pay as damages because of "bodily injury" or "property damage" to which this insurance applies. We will have the right and duty to defend the insured against any "suit" seeking those damages. However, we will have no duty to defend the insured against any "suit" seeking damages for "bodily injury" or "property damage" to which this insurance does not apply. We may, at our discretion, investigate any "occurrence" and settle any claim or "suit" that may result. But:

- (1) The amount we will pay for damages is limited as described in Section III – Limits Of Insurance; and
- (2) Our right and duty to defend end when we have used up the applicable limit of insurance in the payment of judgments or settlements under Coverages A or B or medical expenses under Coverage C.

No other obligation or liability to pay sums or perform acts or services is covered unless explicitly provided for under Supplementary Payments.

b. This insurance applies to "bodily injury" and "property damage" only if:

- (1) The "bodily injury" or "property damage" is caused by an "occurrence" that takes place in the "coverage territory";
- (2) The "bodily injury" or "property damage" occurs during the policy period; and
- (3) Prior to the policy period, no insured listed under Paragraph 1. of Section II – Who Is An Insured and no "employee" authorized by you to give or receive notice of an "occurrence" or claim knew that the "bodily injury" or "property damage" had occurred, in whole or in part. If such a listed insured or authorized "employee" knew, prior to the policy period, that the "bodily injury" or "property damage" occurred, then any continuation, change or resumption of such "bodily injury" or "property damage" during or after the policy period will be deemed to have been known prior to the policy period.

c. "Bodily injury" or "property damage" which occurs during the policy period and was not, prior to the policy period, known to have occurred by any insured listed under Paragraph 1. of Section II – Who Is An Insured or any "employee" authorized by you to give or receive notice of an "occurrence" or claim, includes any continuation, change or resumption of that "bodily injury" or "property damage" after the end of the policy period.

d. "Bodily injury" or "property damage" will be deemed to have been known to have occurred at the earliest time when any insured listed under Paragraph 1. of Section II – Who Is An Insured or any "employee" authorized by you to give or receive notice of an "occurrence" or claim:

- (1) Reports all, or any part, of the "bodily injury" or "property damage" to us or any other insurer;
- (2) Receives a written or verbal demand or claim for damages because of the "bodily injury" or "property damage"; or
- (3) Becomes aware by any other means that "bodily injury" or "property damage" has occurred or has begun to occur.

- a. We have used up the applicable limit of insurance in the payment of judgments, settlements or medical expenses; or
- b. The conditions set forth above, or the terms of the agreement described in Paragraph f. above, are no longer met.

SECTION II – WHO IS AN INSURED

- 1. If you are designated in the Declarations as:
 - a. An individual, you and your spouse are insureds, but only with respect to the conduct of a business of which you are the sole owner.
 - b. A partnership or joint venture, you are an insured. Your members, your partners, and their spouses are also insureds, but only with respect to the conduct of your business.
 - c. A limited liability company, you are an insured. Your members are also insureds, but only with respect to the conduct of your business. Your managers are insureds, but only with respect to their duties as your managers.
 - d. An organization other than a partnership, joint venture or limited liability company, you are an insured. Your "executive officers" and directors are insureds, but only with respect to their duties as your officers or directors. Your stockholders are also insureds, but only with respect to their liability as stockholders.
 - e. A trust, you are an insured. Your trustees are also insureds, but only with respect to their duties as trustees.

- 2. Each of the following is also an insured:
 - a. Your "volunteer workers" only while performing duties related to the conduct of your business, or your "employees", other than either your "executive officers" (if you are an organization other than a partnership, joint venture or limited liability company) or your managers (if you are a limited liability company), but only for acts within the scope of their employment by you or while performing duties related to the conduct of your business. However, none of these "employees" or "volunteer workers" are insureds for:

- (1) "Bodily injury" or "personal injury":
 - (a) To you, to your partners or members (if you are a partnership or joint venture), to your members (if you are a limited liability company), to a co-"employee" while in the course of his or her employment or performing duties related to the conduct of your business, or to your other "volunteer

workers" while performing duties related to the conduct of your business;

- (b) To the spouse, child, parent, brother or sister of that co-"employee" or "volunteer worker" as a consequence of Paragraph (1)(a) above;
- (c) For which there is any obligation to share damages with or repay someone else who must pay damages because of the injury described in Paragraph (1)(a) or (b) above; or
- (d) Arising out of his or her providing or failing to provide professional health care services.

Unless you are in the business or occupation of providing professional health care services, Paragraphs (1)(a), (b), (c) and (d) above do not apply to "bodily injury" arising out of providing or failing to provide first aid or "Good Samaritan services" by any of your "employees" or "volunteer workers", other than an employed or volunteer doctor. Any such "employees" or "volunteer workers" providing or failing to provide first aid or "Good Samaritan services" during their work hours for you will be deemed to be acting within the scope of their employment by you or performing duties related to the conduct of your business.

- (2) "Property damage" to property:
 - (a) Owned, occupied or used by;
 - (b) Rented to, in the care, custody or control of, or over which physical control is being exercised for any purpose by;
you, any of your "employees", "volunteer workers", any partner or member (if you are a partnership or joint venture), or any member (if you are a limited liability company).
- b. Any person (other than your "employee" or "volunteer worker"), or any organization, while acting as your real estate manager.
- c. Any person or organization having proper temporary custody of your property if you die, but only:
 - (1) With respect to liability arising out of the maintenance or use of that property; and
 - (2) Until your legal representative has been appointed.

COMMERCIAL GENERAL LIABILITY

- d. Your legal representative if you die, but only with respect to duties as such. That representative will have all your rights and duties under this Coverage Part.
 - e. Any person or organization that, with your express or implied consent, either uses or is responsible for the use of a watercraft that you do not own that is:
 - (1) 50 feet long or less; and
 - (2) Not being used to carry any person or property for a charge.
3. Any organization you newly acquire or form, other than a partnership, joint venture or limited liability company, and of which you are the sole owner or in which you maintain an ownership interest of more than 50%, will qualify as a Named Insured if there is no other similar insurance available to that organization. However:
- a. Coverage under this provision is afforded only until the 180th day after you acquire or form the organization or the end of the policy period, whichever is earlier;
 - b. Coverage **A** does not apply to "bodily injury" or "property damage" that occurred before you acquired or formed the organization; and
 - c. Coverage **B** does not apply to "personal and advertising injury" arising out of an offense committed before you acquired or formed the organization.

For the purposes of Paragraph 1. of Section II – Who Is An Insured, each such organization will be deemed to be designated in the Declarations as:

- a. An organization, other than a partnership, joint venture or limited liability company; or
 - b. A trust;
- as indicated in its name or the documents that govern its structure.
4. Any person or organization that is a premises owner, manager or lessor and that you have agreed in a written contract or agreement to include as an additional insured on this Coverage Part is an insured, but only with respect to liability for "bodily injury", "property damage" or "personal and advertising injury" that:
- a. Is "bodily injury" or "property damage" that occurs, or is "personal and advertising injury" caused by an offense that is committed, subsequent to the signing of that contract or agreement; and

- b. Arises out of the ownership, maintenance or use of that part of any premises leased to you.

The insurance provided to such premises owner, manager or lessor is subject to the following provisions:

- a. The limits of insurance provided to such premises owner, manager or lessor will be the minimum limits that you agreed to provide in the written contract or agreement, or the limits shown in the Declarations, whichever are less.
 - b. The insurance provided to such premises owner, manager or lessor does not apply to:
 - (1) Any "bodily injury" or "property damage" that occurs, or "personal and advertising injury" caused by an offense that is committed, after you cease to be a tenant in that premises; or
 - (2) Structural alterations, new construction or demolition operations performed by or on behalf of such premises owner, manager or lessor.
5. Any person or organization that is an equipment lessor and that you have agreed in a written contract or agreement to include as an additional insured on this Coverage Part is an insured, but only with respect to liability for "bodily injury", "property damage", or "personal and advertising injury" that:
- a. Is "bodily injury" or "property damage" that occurs, or is "personal and advertising injury" caused by an offense that is committed, subsequent to the signing of that contract or agreement; and
 - b. Is caused, in whole or in part, by your acts or omissions in the maintenance, operation or use of equipment leased to you by such equipment lessor.

The insurance provided to such equipment lessor is subject to the following provisions:

- a. The limits of insurance provided to such equipment lessor will be the minimum limits that you agreed to provide in the written contract or agreement, or the limits shown in the Declarations, whichever are less.
- b. The insurance provided to such equipment lessor does not apply to any "bodily injury" or "property damage" that occurs, or "personal and advertising injury" caused by an offense that is committed, after the equipment lease expires.

No person or organization is an insured with respect to the conduct of any current or past partnership, joint

PROPOSAL

TO THE MAYOR AND COMMISSIONERS
CITY OF HOLLYWOOD, FLORIDA

SUBMITTED 04/26/23

Dear Mayor and Commissioners:

The undersigned, as BIDDER, hereby declares that the only person or persons interested in the Proposal as principal or principals is or are named herein and that no other person than herein mentioned has any interest in this Proposal or in the Contract to be entered into; that this Proposal is made without connection with any other person, company or parties making a Bid or Proposal; and that it is in all respects fair and in good faith without collusion or fraud.

The BIDDER further declares that he has examined the site of the Work and informed himself fully in regard to all conditions pertaining to the place where the Work is to be done; that he has examined the Drawings and Specifications for the Work and contractual documents relative thereto, including the Notice to Bidders, Instructions to Bidders, Proposal Bid Form, Form of Bid Bond, Form of Contract and Form of Performance Bond, General, Supplementary and Technical Specifications, Addenda, Drawings, and Local Preference Program, Exhibit A, and has read all of the Provisions furnished prior to the opening of bids; and that he has satisfied himself relative to the work to be performed.

The undersigned BIDDER has not divulged to, discussed or compared his bid with other bidders and has not colluded with any other BIDDER of parties to this bid whatever.

If this Proposal is accepted, the undersigned BIDDER proposes and agrees to enter into and execute the Contract with the City of Hollywood, Florida, in the form of Contract specified; of which this Proposal, Instructions to Bidders, General Specifications, Supplementary Conditions and Drawings shall be made a part for the performance of Work described therein; to furnish the necessary bond equal to one hundred (100) percent of the total Contract base bid, the said bond being in the form of a Cash Bond or Surety Bond prepared on the applicable approved bond form furnished by the CITY; to furnish all necessary materials, equipment, machinery, tools, apparatus, transportation, supervision, labor and all means necessary to construct and complete the work specified in the Proposal and Contract and called for in the Drawings and in the manner specified; to commence Work on the effective date established in the "Notice to Proceed" from the ENGINEER; and to substantially complete all Contract Work within 90 days with final completion within 120 days, and stated in the "Notice to Proceed" or pay liquidated damages for each calendar day in excess thereof, or such actual and consequential damages as may result therefrom, and to abide by the Local Preference Ordinance, Exhibit A.

The BIDDER acknowledges receipt of the any and all addenda.

And the undersigned agrees that in case of failure on his part to execute the said Contract and the Bond within ten (10) days after being presented with the prescribed Contract forms, the check or Bid Bond accompanying his bid, and the money payable thereon, shall be paid into the funds of the City of Hollywood, Florida, otherwise, the check or Bid Bond accompanying this Proposal shall be returned to the undersigned.

Attached hereto is a certified check on the

_____ Bank of _____

or approved Bid Bond for the sum of

5% of Bid Amount Dollars (\$) according to the conditions under the Instructions to Bidders and provisions therein.

NOTE: If a Bidder is a corporation, the legal name of the corporation shall be set forth below, together with signature(s) of the officer or officers authorized to sign Contracts on behalf of the corporation and corporate seal; if Bidder is a partnership, the true name of the firm shall be set forth below with the signature(s) of the partner or partners authorized to sign Contracts in behalf of the partnership; and if the Bidder is an individual, his signature shall be placed below; if a partnership, the names of the general partners.

WHEN THE BIDDER IS AN INDIVIDUAL:

(Signature of Individual)

(Printed Name of Individual)

(Address)

WHEN THE BIDDER IS A SOLE PROPRIETORSHIP OR OPERATES UNDER A TRADE NAME:

(Name of Firm)

(Address)

(Signature of Individual) (SEAL)

WHEN THE BIDDER IS A PARTNERSHIP:

(Name of Firm) A Partnership

(Address)

By: _____
(SEAL)
(Partner)

Name and Address of all Partners:

WHEN THE BIDDER IS A JOINT VENTURE:

(Correct Name of Corporation)

By: _____ (SEAL)
(Address)

(Official Title)

As Joint Venture
(Corporate Seal)

Organized under the laws of the State of _____, and authorized by the law to make this bid and perform all Work and furnish materials and equipment required under the Contract Documents.

WHEN THE BIDDER IS A CORPORATION:

Southeastern Engineering Contractors, Inc

(Correct Name of Corporation)

By: _____
(SEAL)

Edwardo Dominguez **President**

(Official Title)

711 NW 209th Ave. 8101 Pembroke Park, FL 33025

(Address of Corporation)

Organized under the laws of the State of Florida, and authorized by the law to make this bid and perform all Work and furnish materials and equipment required under the Contract Documents.

CERTIFIED COPY OF RESOLUTION OF BOARD OF DIRECTORS

Southeastern Engineering Contractors, Inc

(Name of Corporation)

RESOLVED that Edwardo Dominguez
(Person Authorized to Sign)

President of **Southeastern Engineering Contractors, Inc**
(Title) (Name of Corporation)

be authorized to sign and submit the Bid or Proposal of this corporation for the following project:

[Project name] Mc Kinley ST Interceptor vent. & Tyler ST
[Project Number] complet box revision
Bid No. IFB-xxxxxxx 057-23-JJ

The foregoing is a true and correct copy of the Resolution adopted by
Southeastern Engineering Contractors, Inc
(Name of Corporation) at a meeting of its Board of

Directors held on the 26 day of April, 2023.

By: _____

Title: President

(SEAL)

The above Resolution MUST BE COMPLETED if the Bidder is a Corporation.

- END OF SECTION -

ATTACHMENT A
CONTRACT

THIS AGREEMENT, made and entered into, this ____ day of _____, A.D., _____, by and between the CITY OF HOLLYWOOD, Florida, a municipal corporation of the State of Florida, part of the first part, (hereinafter sometimes called the "CITY"), and

party of the second part (hereinafter sometimes called the "CONTRACTOR").

WITNESSETH: The parties hereto, for the considerations herein-after set forth, mutually agree as follows:

Article 1. Scope of Work: The CONTRACTOR shall furnish all labor, materials, and equipment and perform all work in the manner and form provided by the Contract Documents, for the Bid amount.

**McKinley Street Interceptor Ventilation & Tyler Street Conflict Box Revision
Project No. 7111**

Article 2. The Contract Sum: The CITY shall pay to the CONTRACTOR, for the faithful performance of the Contract, in lawful money of the United States of America, and subject to additions and deductions as provided in the Contract Documents, as follows:

Based upon the prices shown in the Proposal heretofore submitted to the CITY by the CONTRACTOR, a copy of said Proposal being a part of these Contract Documents, the aggregate amount of this Contract being the sum of

Article 3. Partial and Final Payments: In accordance with the provisions fully set forth in the "General Conditions" of the "Specifications", and subject to additions and deductions as provided, the CITY shall pay the CONTRACTOR as follows:

- (a) On the 15th day, or the first business day thereafter, of each calendar month, the CITY shall make partial payments to the CONTRACTOR on the basis of a duly certified and approved estimate of work performed during the preceding calendar month by the CONTRACTOR, less five percent (5%) of the amount of such estimate which is to be retained by the CITY until all work has been performed strictly in accordance with this Agreement and until such work has been accepted by the CITY. The parties' rights and obligations regarding retainage are further specified in Florida Statute Section 218.735.
- (b) Upon submission by the CONTRACTOR of evidence satisfactory to the CITY that all payrolls, material bills and other costs incurred by the CONTRACTOR in connection with the construction of the WORK have been paid in full, and also, after all guarantees that may be required in the Specifications have been furnished and are found acceptable by the CITY, final payment on account of this Agreement shall be made within sixty (60) days after completion by the CONTRACTOR of all work covered by this Agreement and acceptance of such work by the ENGINEER and approved by the CITY.

Article 4. Time of Completion: The CONTRACTOR shall commence work to be performed under this Contract within ten (10) consecutive calendar days after date of written Notice To Proceed and shall fully complete the Contract in accordance within the Contract Documents and meet all intermediate milestone completion dates required after said date of written notice as set forth in the Proposal, as may be modified by Instructions to Bidders, and stated in the Notice to Proceed.

It is mutually agreed between the parties hereto, that time is the essence, and in the event that construction of the WORK is not completed within the Contract Time and per intermediate dates, as may have been modified solely in accordance with the General Conditions of this Contract, that from the compensation otherwise to be paid to the CONTRACTOR, the CITY is authorized and shall retain, for each day thereafter, Sundays and holidays included, the sum set forth in the Supplementary General Conditions of this Contract as liquidated damages sustained by the CITY in the event of such default by the CONTRACTOR, or shall withhold such compensation for actual and consequential damages as may be stated therein or contemplated therefrom.

Article 5. Additional Bond: It is further mutually agreed between the parties hereto, that if, at any time after the execution of this Agreement and the Payment and Performance Bonds required herein for the express purpose of assuring the faithful performance of the Contractor's work hereto attached, the CITY shall deem the surety or sureties' to be unsatisfactory, or, if for any reason, said bonds cease to be adequate to cover the performance of the work, the CONTRACTOR shall, at his expense, within five (5) days after receipt of notice from the CITY furnish an additional bond or bonds in such form and amount, and with such surety or sureties as shall be satisfactory to the CITY. In such event, no further payment to the CONTRACTOR shall be deemed to be due under this agreement until such new or additional security for the faithful performance of the work shall be furnished in manner and form satisfactory to the CITY.

Article 6. Contract Documents: All of the documents hereinafter listed form the Contract and they are as fully a part of the Contract as if hereto attached, or repeated in this Agreement:

1.	Introduction	15.	General Terms and Conditions
2.	Special Terms and Conditions	16.	Scope of Services
3.	Submittal Checklist Form	17.	Contract
4.	Acknowledgement and Signature Page	18.	Drug-Free Workplace Program
5.	Bid Form	19.	Solicitation, Giving, and Acceptance...
6.	Vendor Reference Form	20.	W-9 (Request for Taxpayer Identification)
7.	Hold Harmless and Indemnity Clause	21.	Performance Bond
8.	Proposal	22.	Payment Bond
9.	Non-Collusion Affidavit	23.	General Conditions, Public Utilities
10.	Sworn Statement...Public Entity Crimes	24.	Supplementary General Conditions
11.	Information Required from Bidders	25.	Addenda
12.	Certifications Regarding Debarment...	26.	Specifications
13.	Trench Safety Form	27.	Drawings
14.	Bid Guaranty Form	28.	List of Subcontractors

Article 7. The rate of wages and fringe benefits, or cash equivalent, for all laborers, mechanics and apprentices employed by any contractor or subcontractor on the work covered by the contract shall be not less than the prevailing rate of wages and fringe benefit payments or cash equivalent for similar skills or classifications of work as established by the General Wage Decision by the United States Department of Labor for Broward County, Florida that is in effect prior to the date the city issues its invitation for bids. If the General Wage Decision fails to provide for a fringe benefit rate for any worker classification, then the fringe benefit rate applicable to the worker classification shall be the fringe benefit rate applicable to the worker classification with a fringe benefit rate that has a basic hourly wage closest in dollar amount to the worker classification for which no fringe benefit rate has been provided.

Article 8. No additional work or extras shall be performed unless the same be duly authorized by appropriate action of the City.

Article 9. That in the event either party brings suit for enforcement of disagreement, the prevailing party shall be entitled to attorney's fees and court costs in addition to any other remedy afforded by law.

Article 10. The Contractor shall guarantee the complete project against poor workmanship and faulty materials for a period of twelve (12) months after final payment and shall immediately correct any defects which may appear during this period upon notification by the City or the Engineer.

Article 11. The making and acceptance of the final payment shall constitute a waiver of all claims by the Contractor, except those previously made and still unsettled.

IN WITNESS WHEREOF the parties hereto have executed this Agreement on the day and date first above written in three (3) counterparts, each of which shall, without proof or accounting for the other counterparts, be deemed an original contract:

THE CITY OF HOLLYWOOD, FLORIDA
Party of the First Part

By: _____ (SEAL)
JOSH LEVY, MAYOR

ATTEST:

PATRICIA A. CERNY, MMC
City Clerk

WHEN THE CONTRACTOR IS A CORPORATION:

Attest:

Secretary

(Correct Name of Corporation)

BY: _____ (SEAL)
President

APPROVED AS TO FORM:

APPROVED AS TO FINANCE:

By _____
DOUGLAS R. GONZALES
City Attorney

By _____
DAVID E. KELLER
Financial Services Director

CERTIFICATE

**STATE OF FLORIDA)
COUNTY OF BROWARD)**

I HEREBY CERTIFY that a meeting of the Board of Directors of _____,
a corporation under the laws of the State of _____, was held on _____,
20__, and the following resolution was duly passed and adopted:

"RESOLVED, that _____ as _____ President of the corporation,
be and he is hereby authorized to execute the contracts on behalf of this
corporation, and that his execution thereof, attested by the Secretary of
the corporation and with corporate seal affixed, shall be the official act and
deed of this corporation."

I further certify that said resolution is now in full force and effect.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the official seal of
the corporation, this _____ day of _____, 20__.

Secretary

- END OF SECTION -

ATTACHMENT A
PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS:

That we _____,
Name Address Tel. No.

as Principal, and _____,
Name Address Tel. No.

as Surety, are held and firmly bound unto the City of Hollywood in the sum of _____ Dollars (\$ _____), for the payment of said sum we bind ourselves, our heirs, executors, administrators and assigns, jointly and severally, for the faithful performance of a certain written contract, dated the _____ day of _____, 20____ entered into between the Principal and the City of Hollywood, Florida, for the installation of **McKinley Street Interceptor Ventilation & Tyler Street Conflict Box Revision, Project No. 7111.**

A copy of said Contract, **No. 7111** is incorporated herein by reference and is made a part hereof as if fully copied herein.

NOW, THEREFORE, THE CONDITIONS OF THIS OBLIGATION ARE SUCH, that if the Principal shall in all respects comply with the terms and conditions of said Contract and his obligations thereunder, including all of the Contract Documents (that include the Introduction, Special Terms and Conditions, Scope of Services, General Terms & Conditions, Submittal Checklist Form, Instructions to Bidders, Proposal, Proposal Bid Form, Basis of Payment, Bid Guaranty Form , Trench Safety Form, Information Required from Bidders, Vendor Reference Forms, Hold Harmless and Indemnity Clause, Non-Collusion Affidavit, Sworn Statement...Public Entity Crimes, Certifications Regarding Debarment... , Drug-Free Workplace Program, Solicitation, Giving, and Acceptance..., Contract, Performance Bond, Payment Bond, General and Supplementary General Conditions, Technical Specifications, Addenda and Drawings), therein referred to and made a part thereof, and such alterations as may be made in said Drawings and Specifications as therein provided for, and shall indemnify and save harmless the City of Hollywood against and from all expenses, damages, injury or conduct, want of care of skill, negligence or default, including patent infringement on the part of said Principal, his agents or employees, in the execution or performance of said Contract, including errors in the Drawings furnished by said Principal, and further, if the Principal shall promptly make payments to all who supply him, with labor and/or materials, used directly or indirectly by the Principal in the prosecution of the work provided for in said Contract, then this obligation shall be null and void; otherwise, the Principal and Surety, jointly and severally, agree to pay the City of Hollywood any difference between the sum that the City of Hollywood may be obliged to pay for the completion of said work, by Contract or otherwise, and the sum that the City of Hollywood would have been obliged to pay for the completion said work had the Principal properly executed all of the provisions of said Contract, and any damages, whether direct, indirect, or consequential, which the City of Hollywood may incur as a result of the failure of the said Principal to properly execute all of the provisions of said Contract.

AND, the said Principal and Surety hereby further bind themselves, their successors, executors, administrators and assigns, jointly and severally, that they will amply and fully protect the City of Hollywood against, and will pay any and all amounts, damages, costs and judgments which may be recovered against or which the Owner may be called upon to pay to any person or corporation by reason of any damage arising from the performance of the said work, repair or maintenance thereof, or the manner of doing the same, or his agents or his servants, or the infringements of any patent rights by reason of the use of any material furnished or work done, as aforesaid or otherwise.

AND, the said Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract or to the work to be performed thereunder or the Specifications and Drawings accompanying the same, shall in any way affect its obligations on this Bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contract or to the work or to the Specifications and Drawings.

WHEN THE PRINCIPAL IS AN INDIVIDUAL:

Signed, sealed and delivered in the presence of:

(Witness)

(Signature of Individual)

(Address)

(Printed Name of Individual)

(Witness)

(Address)

WHEN THE PRINCIPAL IS A SOLE PROPRIETORSHIP OR OPERATES UNDER A TRADE NAME:

Signed, sealed and delivered in the presence of:

(Witness)

(Name of Firm)

(Address)

By: _____
(Seal)
(Signature of Individual)

(Witness)

Address

WHEN THE PRINCIPAL IS A PARTNERSHIP:

Signed, sealed and delivered in the presence of:

(Witness)

(Name of Partnership)

(Address)

By: _____
(Seal)
(Partner)

(Witness)

(Printed Name of Partner)

Address

WHEN THE PRINCIPAL IS A CORPORATION:

Attest:

(Secretary)

(Name of Corporation)

By: _____
(Seal)
(Affix Corporate Seal)

(Printed Name)

(Official Title)

CERTIFICATE AS TO CORPORATE PRINCIPAL

I, _____, certify that I am the Secretary of the corporation named as Principal in the within bond; that _____, who signed the said bond

on behalf of the Principal was then _____ of said corporation; that I know his signature, and his signature thereto is genuine; and that said Bond was duly signed, sealed and attested for and on behalf of said corporation by authority of its governing body.

Secretary (SEAL)

TO BE EXECUTED BY CORPORATE SURETY

Attest:

(Secretary)

(Corporate Surety)

(Business Address)

By: _____
(Affix Corporate Seal)

(Attorney-In-Fact)

(Name of Local Agency)

(Business Address)

STATE OF FLORIDA

Before me, a Notary Public, duly commissioned, qualified and acting, personally appeared, _____ to me well known, who being by me first duly sworn upon oath, says that he is the attorney-in-fact for the _____ and that he has been authorized by _____ to execute the foregoing bond on behalf of the CONTRACTOR named therein in favor of the City of Hollywood, Florida.

Subscribed and sworn to before me this _____ day of _____, 20____.

Notary Public, State of Florida

My Commission Expires:

APPROVED AS TO FORM:

APPROVED AS TO FINANCE:

By _____
Douglas R. Gonzales
City Attorney

By _____
David E. Keller
Financial Services Director

- END OF SECTION -

ATTACHMENT A
PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS:

That we, _____
Name Address Tel. No.

As Principal and _____
Name Address Tel. No.

as Surety, are held and firmly bound to the CITY OF HOLLYWOOD, FLORIDA herein called the City, in the sum of _____

_____ Dollars (\$ _____) for the payment of said sum we bind ourselves, our heirs, executors, administrators and assigns, jointly and severally, for the faithful performance of a certain written contract dated the _____ day of _____, 20____, entered into between the Principal and the City of Hollywood, Florida for the **McKinley Street Interceptor Ventilation & Tyler Street Conflict Box Revision, Project No. 7111.**

Which contract is by reference made a part hereof, and is hereinafter referred to as the Contract.

THE CONDITION of this bond is that if Principal promptly makes payments to all claimants defined in Section 255.05 (1), F.S., supplying Principal with labor, materials or supplies used directly or indirectly by principal in the prosecution of the work provided for in the Contract, then this bond shall be null and void and of no further force and effect; otherwise to remain in full force and effect.

Said surety for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or any other changes in or under contract documents and compliance or noncompliance with any formalities connected with the contract does not affect Surety's obligation under this bond and Surety waives notice of any such change, extension of time, alteration or addition to the terms of the Contract or any other changes, compliance, or noncompliance to the terms of the Contract or to the Work or to the Specifications.

This bond is furnished pursuant to the statutory requirements for bond on public works projects being Florida Statute 255.05. Claimants are hereby notified that the Statute 255.05(2) specifically requires that notice be given to Contractor within 45 days after beginning to furnish labor, materials or supplies for the prosecution of the work that claimants intends to look to the bond for protection. Further notice is hereby given claimants that written notice of nonpayment within ninety (90) days after performance of the labor or after complete delivery of the materials or supplies must be delivered to the Contractor and to the Surety. Further notice is hereby given that no action for labor, materials or supplies may be instituted against the Contractor or the Surety on the bond after one year for the performance of the labor or completion of delivery of the materials or supplies.

Without modifying the foregoing, this bond shall be construed as requiring of the principal and surety no more and no less than is specified in F.S. 255.050.

SIGNED AND SEALED, this _____ day of _____, 20____.

PRINCIPAL:

ATTEST:

(Signature)

(Title)

(SEAL)

SURETY:

(Surety)

ATTEST:

(Signature)

(Attorney-in-Fact)

APPROVED AS TO FORM:

APPROVED AS TO FINANCE:

By _____
Douglas R. Gonzales
City Attorney

By _____
David E. Keller
Financial Services Director

- END OF SECTION -

ATTACHMENT B
GENERAL CONDITIONS, PUBLIC UTILITIES

Index to Articles

		<u>Page</u>
Article 1	Definitions	5-7
Article 2	Organizational Abbreviations	8-9
Article 3	Miscellaneous Preliminary Matters	
3.1	Contract Document Discrepancies	10
3.2	Submissions	10
3.3	Pre-Construction Conference	10
3.4	Contract Time	10
3.5	Computation of Time	10
3.6	Commencement of Work	10
3.7	Extension of Contract Time	11
3.8	Notice and Service Thereof	11
3.9	Separate Contract	11
3.10	Assignments of Contract	11
3.11	Patents	11
3.12	Federal Excise Tax	12
3.13	Savings Due to Excise Tax Exemptions	12
3.14	Overtime Work	13
3.15	Inspections and Testing During Overtime	13
3.16	Nights, Sunday or Holiday Work	13
3.17	Injury or Damage Claims	13
Article 4	Contract Documents	
4.1	Intent	14
4.2	Order of Precedence of Contract Documents	14
4.3	Reference to Standards	14
Article 5	Bonds and Insurance	
5.1	Bid Guarantee	15
5.2	Performance and Payment Bond	15
5.3	Signatures	15
5.4	Insurance Coverage	15
5.5	Certificates of Insurance	15
5.6	Insurance Limits of Liability	16

		<u>Page</u>
Article 6	Availability of Land; Reference Points	
6.1	Rights-Of-Way	17
6.2	Permits	17
6.3	Lines and Grades	17
Article 7	Contractor's Responsibilities	
7.1	Laws/Regulations to Be Observed	18
7.2	Indemnification of City	18
7.3	Guarantee of Payments	18
7.4	Permits and Licenses	18
7.5	Emergencies	19
7.6	Substitutes or "Or Equal"	19-20
7.7	Shop Drawings	21
7.8	Personnel	22-23
7.9	Safety and Protection	23
7.10	Traffic Control, Public Safety and Convenience	24
7.11	Use of Explosives	25
7.12	Loading of Structures	25
7.13	Concerning Subcontractors	25
7.14	Materials and Equipment	25-27
7.15	Temporary Utilities	27
7.16	Review of Records	27
7.17	Use of Premises	27
7.18	Contractor's Daily Reports	28
7.19	Record Documents	28
7.20	Cleanliness of the Site	28
7.21	Dust Control	28
7.22	Continuing the Work	28
7.23	Indemnification	28-29
Article 8	City's Responsibility	
8.1	Communications	30
8.2	Furnish Contract Documents	30
8.3	Furnish Right-of-Way	30
8.4	Timely Delivery of Materials	30
Article 9	Engineer's Status	
9.1	Authority of the Engineer	31
9.2	Access to the Work	31
9.3	Limitations on the Engineer's Responsibilities	32
9.4	Inspectors	32-33
9.5	Inspections	33

		<u>Page</u>
Article 10	Changes in the Work/Contract Price	
10.1	Changes in Work or Terms of Contract Documents	34
10.2	Supplemental Instructions - Clarifications	34
10.3	Field Orders/Change Orders	34-35
10.4	Value of Change Order Work	35-39
10.5	Notification and Claim for Change of Contract Price	39
10.6	Notice of Change	39
10.7	Records	40
10.8	Cancelled Items and Payments Therefore	40
10.9	Full Payment	40
Article 11	Changes in the Contract Time	
11.1	Change Order	41
11.2	Notification and Claim for Change of Contract Time	41
11.3	Basis for Extension	41
11.4	Change of Time due to Contract Execution Problems	42
11.5	Change of Time due to Change Order Evaluation	42
11.6	Change of Time and Inspection and Testing	42
11.7	Change of Time and Defective Work	42
11.8	Liquidated Damages	42
Article 12	Warranty and Guarantee; Test and Inspections; Correction, Removal or Acceptance of Defective Work	
12.1	Warranty and Guarantee	43
12.2	Tests and Inspections	43
12.3	Uncovering Work	43-44
12.4	City May Stop the Work	44
12.5	Correction or Removal of Defective Work	44
12.6	One Year Correction Period	44
12.7	Acceptance of Defective Work	45
12.8	City May Correct Defective Work	45
Article 13	Payments to the Contractor	
13.1	Basis of Payment	46
13.2	Unit Price Inclusion	46
13.3	Schedule of Values	46
13.4	Changed Conditions	46
13.5	Application for Progress Payment	46
13.6	Payment for Materials	47
13.7	Affidavit Required	47
13.8	Retainage	47
13.9	Contractor's Warranty of Title	47
13.10	Review of Application for Payment	47-48
13.11	Payment to the Contractor	48

		<u>Page</u>
Article 14	Substantial Completion, Partial Utilization, Final Clean Up, Inspection, Payment and Acceptance	
14.1	Substantial Completion	49
14.2	Partial Utilization	49-50
14.3	Final Clean-Up	50
14.4	Final Inspection	50
14.5	Final Application for Payment	51
14.6	Final Payment and Acceptance	51
14.7	Payment of Retainage without Final Completion	51
14.8	Contractor's Continuing Obligation	52
14.9	Waiver of Claims	52
Article 15	Suspension of Work and Termination	
15.1	City May Suspend Work	53
15.2	City May Terminate	53-54
15.3	Contractor May Stop Work or Terminate	55

**ATTACHMENT B
GENERAL CONDITIONS, PUBLIC UTILITIES**

**CITY OF HOLLYWOOD, FLORIDA
GENERAL CONDITIONS
FOR CONSTRUCTION CONTRACTS**

ARTICLE 1 - DEFINITIONS

In the interpretation of these Contract Documents the following terms shall have the meaning indicated:

ADDENDA - Written or graphic instruments issued prior to the opening of Bids which clarify, correct or change the Contract Documents.

CHANGE ORDER - A written order to CONTRACTOR executed in accordance with City procurement procedures, as amended authorizing an addition, deletion or revision in the work, or an adjustment in the Contract Price or the Contract Time, issued after the date of Award.

CITY (OWNER) - The City of Hollywood, Florida.

COMMISSION - The City Commission of the City of Hollywood, Florida, being the legislative body of the CITY as set forth in the City of Hollywood Charter.

CONTRACT - The written agreement between the CITY and the CONTRACTOR covering the work to be performed in accordance with the other Contract Documents which are attached to the Contract and made a part thereof.

CONTRACTOR - The person, firm, or corporation with whom the CITY has entered into the Contract.

CONTRACT DOCUMENTS - The Notice to Bidders, Instruction to Bidders, Proposal, Information Required of Bidders, all Bonds, Agreement, and all supporting documents, these General Requirements and Covenants, the Specifications, Drawings and Permits, together with all Addenda and Change Orders issued with respect thereto.

CONTRACT PRICE - Total monies payable by the CITY to the CONTRACTOR under the terms and conditions of the Contract Documents.

CONTRACT TIME - The number of days agreed to in the Proposal, commencing with the date of the Notice to Proceed for completion of the work.

CONTROL - shall mean having the primary power, direct or indirect, to influence the management of a business enterprise. The controlling party must have the demonstrable ability to make independent and unilateral business decisions on a day-to-day basis, as well as the independent and unilateral ability to make decisions which may influence and chart the future course of the business.

DATE OF SUBSTANTIAL COMPLETION - The date when the work on the project, or specified part thereof, is substantially completed in accordance with the Contract Documents, such that

the CITY can occupy or utilize the project or specified part thereof for the use and purpose for which it was intended as determined and accepted by the Engineer.

DAYS - Calendar days of 24 hours measured from midnight.

DRAWINGS - The drawings which show the character and scope of the work to be performed and which have been prepared by the DESIGN ENGINEER approved by ENGINEER and are referred to in and are a part of the Contract Documents.

ENGINEER - The Director of Public Utilities of the CITY of Hollywood, Florida, or his authorized designee.

EXCUSABLE DELAY - Delay caused by the CITY, hurricane, tornadoes, fires, floods, epidemics or labor strikes.

GENERAL CONDITIONS - That segment of the Contract Specifications incorporating the Provisions common to all CITY Construction Contracts.

INEXCUSABLE DELAY - Any delay caused either (i) by events or circumstances within the control of the CONTRACTOR not specified in the definition of excusable delay.

INSPECTOR - The authorized field representative of the ENGINEER.

LIQUIDATED DAMAGES - The amount prescribed in the General Requirements to be paid the CITY, or to be deducted from any payments due the CONTRACTOR for each day's delay in completing the whole or any specified portion of the work beyond the Contract Time.

NOTICE OF AWARD - The written notice by the CITY to the successful Bidder stating that upon his execution of the Agreement and other requirements as listed therein within the time specified the CITY will sign and deliver the Agreement.

NOTICE TO PROCEED - A written notice by the ENGINEER to the CONTRACTOR fixing the date on which the Contract Time will commence to run and on which the CONTRACTOR shall start to perform his obligation under the Contract Documents.

"OR EQUAL" - Equivalent or superior in construction, efficiency and effectiveness to a type, brand, model or process called out in the Contract Documents to establish a basis of quality as determined by the ENGINEER.

SHOP DRAWINGS - All certified affidavits, drawings, diagrams, illustrations, schedules and other data which are specifically prepared by CONTRACTOR, a Subcontractor, manufacturer, fabricator, supplier or distributor to illustrate some portion of the work and all illustrations, brochures, standard schedules, performance charts, instructions, diagrams and other information prepared by a manufacturer, fabricator, supplier or distributor and submitted by CONTRACTOR to illustrate material or equipment for some portion of the WORK.

SPECIFICATIONS - Division 1 through 17 of these Contract Documents, consisting of administrative details and written technical descriptions of materials, equipment, standards and workmanship.

SUPPLEMENTARY CONDITIONS - Division 1 of the Contract Specifications incorporating the provisions peculiar to a specific project.

SUBCONTRACTOR - An individual, firm or corporation having a direct contract with CONTRACTOR or with any other Subcontractor for the performance of a part of the work

SURETY - The person, firm or corporation responsible for the Bidder's acts in the execution of the Contract, or which is bound to the CITY with and for the CONTRACTOR to insure performance of the Contract and payment of all obligations pertaining to the work.

WORK - All the work materials or products specified, indicated, shown or contemplated in the Contract Documents to construct and complete the improvement, including all alterations, modifications, amendments or extension thereto made by Change Orders.

ARTICLE 2 - ORGANIZATIONAL ABBREVIATIONS

Abbreviations of organizations which may be used in these Specifications are:

AASHTO:	American Association of State Highway and Transportation Officials
ACI:	American Concrete Institute
AIA:	American Institute of Architects
AISC:	American Institute of Steel Construction
AITC:	American Institute of Timber Construction
ANSI:	American National Standards Institute
APWA:	American Public Works Association
ASTM:	American Society for Testing and Materials
ASCE:	American Society of Civil Engineers
ASME:	American Society of Mechanical Engineers
ASHRAE:	American Society of Heating, Refrigerating and Air Conditioning Engineers
AWPA:	American Wood Preservers Association
AWWA:	American Water Works Association
AWS:	American Welding Society
BCEQCB:	Broward County Environmental Quality Control Board
CRSI:	Concrete Reinforcing Steel Institute
FDEP:	Florida Department of Environmental Protection
FDNR:	Florida Department of Natural Resources
FDOT:	Florida Department of Transportation
FPL:	Florida Power and Light
IEEE:	Institute of Electrical and Electronic Engineers
NACE:	National Association of Corrosion Engineers
NCPI:	National Clay Pipe Institute

NEC: National Electrical Code

NEMA: National Electrical Manufacturers Association

NFPA: National Fire Protection Association

OSHA: Occupational Safety and Health Act

PCI: Prestressed Concrete Institute

SFBC: South Florida Building Code, Broward Edition, Latest Revision

SFWMD: South Florida Water Management District

SSPC: Structural Steel Painting Council

UL: Underwriters' Laboratories, Inc.

UNCLE: Utility Notification Center for Location before Excavation (1-800-432-4770)

USEPA: United States Environmental Protection Agency

USGS: United States Geological Survey

WWEMA: Water and Wastewater Equipment Manufacturers Association

ARTICLE 3 - MISCELLANEOUS PRELIMINARY MATTERS

3.1 Contract Document Discrepancies:

Any discrepancies, conflicts, errors or omissions found in the Contract Documents shall be promptly reported to the ENGINEER who will issue a correction, if necessary, in writing. The CONTRACTOR shall comply with any corrective measures regarding the same as prescribed by the ENGINEER.

3.2 Submissions:

Unless indicated otherwise in the Contract Documents, within seven days subsequent to the CONTRACTOR executing and submitting the required documents of Article 2.13 in Section II - Special Terms and Conditions, the CONTRACTOR shall submit to the ENGINEER an estimated progress schedule indicating the starting and completion days of the various stages of the work. A preliminary Schedule of Values and a preliminary schedule of Shop Drawing submissions may also be required by Section 01300 of Division 1 - General Requirements.

3.3 Pre-construction Conference:

The Contractor will be required to attend a mandatory Pre-Construction Conference for review of the above schedules, establishing procedures and establishing a working understanding among the parties as to the work.

3.4 Contract Time:

The Contract Time will commence on the date of the Notice to Proceed and shall exist for the total number of days as specified in Attachment C – Supplementary General Conditions, Section 1, Project Schedule as modified by any subsequent Change Orders, Unless the CONTRACTOR fails to complete the requirements of Section II - Special Terms and Conditions, the additional time in days (including weekends) required to correctly complete the documents will be deducted by CITY from the Contract Time specified by the CONTRACTOR in this Proposal.

3.5 Computation of Time:

When any period of time is referred to the Contract Documents by days, it shall be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a legal holiday, such day shall be omitted from the computation.

3.6 Commencement of Work:

The CONTRACTOR shall not perform work at the site prior to the date of the Notice to Proceed.

3.7 Extension of Contract Time:

Extensions of time shall be based solely upon the effect of delays to the work as a whole. Extensions of time shall not be granted for delays to the work, unless the CONTRACTOR can clearly demonstrate, through schedule analysis, that the delay to the work as a whole arose in accordance with Article 11, Changes in Contract Time and that such delays did or will, in fact, delay the progress of work as a whole. Time extensions shall not be allowed for delays to parts of the work that are not on the critical path of the Project schedule. Time extensions shall not be granted until all float or contingency time, at the time of the delay, available to absorb specific delays and associated impacts, is used.

3.8 Notice and Service Thereof:

All notices, demands, requests, instructions, approvals and claims shall be in writing. Notices, demands, etc. shall be deemed to have been validly given if delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or if delivered at or sent by registered or certified mail, postage prepaid, to the business address as defined at the Pre-Construction Conference.

3.9 Separate Contract:

The CITY reserves the right to let other Contracts in connection with this Project. The CONTRACTOR shall afford other Contractors reasonable opportunity for the introduction and storage for their materials and the execution of their work and shall properly connect and coordinate his work with theirs.

3.10 Assignments of Contract:

No assignment by the CONTRACTOR of the Contract or of any part thereof, or any monies due or to become due thereunder shall be made.

3.11 Patents:

It is mutually understood and agreed that without exception, Contract prices are to include all royalties and costs arising from patents, trademarks, and copyrights in any way involved in the work. It is the intent that whenever the Contractor is required or desired to use any design, device, material or process covered by letters, patent, or copyright, the right for such use shall be provided for by suitable legal agreements with the Patentee or Owner and a copy of this agreement shall be filed with the ENGINEER. However, whether or not such an agreement is made or filed as noted, the CONTRACTOR and the Surety in all cases shall indemnify and save harmless the CITY from any and all claims for infringement by reason of the use of any such patented design, device, material or process, to be performed under the Contract, and shall indemnify the said CITY from any costs, expenses, and damages which it may be obliged to pay, by reason of such infringement, at any time during the prosecution or after the completion of the work.

3.12 Federal Excise Tax:

The forms needed for applying for exemption certificates for materials and equipment, normally subject to the Federal Excise Tax, may be obtained from the Director of Internal Revenue, Jacksonville, Florida.

The CONTRACTOR is solely responsible for obtaining the desired exemption certificate from the Federal Government.

3.13 Savings Due to Excise Tax Exemptions:

The Bidder shall include in the Bid price the estimated cost of all goods, supplies and equipment which will be incorporated in the Work and the taxes that the Bidder would be required to pay if the Bidder were to purchase such goods, supplies or equipment. By subsequent Change Order(s), the parties shall reduce the Bid price to reflect any goods, supplies and equipment purchased directly by City and the resulting tax savings due to City's exemption from Excise Taxes.

CONTRACTOR shall pay all sales, consumer, use and other similar taxes required to be paid by CONTRACTOR in accordance with the laws and regulations of the State of Florida and its political subdivisions. Consistent with the tax exemption for municipalities provided by state law, CITY and CONTRACTOR shall jointly operate so that CITY may purchase directly, goods, supplies and equipment which will be incorporated into the Work. The goods, supplies and equipment that will be purchased by CITY shall be approved in advance by the parties.

With respect to all goods, supplies and equipment to be purchased by CITY, CONTRACTOR shall, on behalf of CITY, take all actions necessary and appropriate to cause all purchases to be made and shall be responsible for delivery of all such goods, supplies and equipment, including verification of correct quantities and documents or orders, coordination of purchases and delivery schedules, sequence of delivery, unloading, handling and storage through installation, obtaining warranties and guarantees required by the Contract Documents, inspection and acceptance of the goods, supplies and equipment at the time of delivery, and other arrangements normally required for the particular goods, supplies or equipment purchased. Unless otherwise directed by CITY, such actions shall also include taking the lead in efforts to resolve any and all disputes with the vendor. CONTRACTOR shall ensure that each vendor of goods, supplies and equipment purchased by CITY agrees in writing to the terms and conditions contained in CITY'S standard purchase order, which terms and conditions are set forth in Attachment C - Supplementary General Conditions of the Contract Documents. Even though CITY may purchase such goods, supplies and equipment, the goods, supplies and equipment shall be stored at the site in the same manner as goods, supplies and equipment purchased by CONTRACTOR.

CONTRACTOR shall hold CITY harmless from delays in manufacturing, delivery, and other unforeseen conditions that may arise as part of the procurement of CITY-purchased goods, supplies and equipment.

3.14 Overtime Work:

The CONTRACTOR shall receive no additional compensation for overtime work, i.e., work in excess of eight hours in any one calendar day or 40 hours in any one calendar week, even though such overtime work may be required under emergency conditions and may be ordered by the ENGINEER in writing. Additional compensation will be paid the CONTRACTOR for overtime work only in the event extra work is ordered by the ENGINEER and the Change Order specifically authorizes the use of overtime work and then only to such extent as overtime wages are regularly being paid by the CONTRACTOR for overtime work of a similar nature in the same locality.

3.15 Inspections and Testing during Overtime:

The CONTRACTOR shall establish a normal work schedule which does not exceed eight hours per day in a normal work day nor 40 hours per week in a normal work week. Normal work days shall be Monday through Friday. Whenever CONTRACTOR's work requires scheduled overtime, unless such overtime work is specifically required by the Contract Documents, CONTRACTOR shall reimburse the CITY for the extra costs incurred for providing Inspectors. Overtime shall be scheduled only after CONTRACTOR obtains written permission from the CITY. A change order shall be prepared to cover the CITY costs. Inspector costs shall be charged to the CONTRACTOR at a rate of \$80.00 per hour with a minimum of four hours charged for weekends and holidays. If the CONTRACTOR has an overtime work force size of fifty or more persons a second Inspector will be required and the costs for two Inspectors will be \$160.00 per hour.

3.16 Nights, Sunday or Holiday Work:

Except upon specific permission of the ENGINEER, the CONTRACTOR shall not perform any work on Sundays or on legal State or Municipal holidays. In accordance with City of Hollywood Code of Ordinances, Section 21.49, no work between 6:00 p.m. and 8:00 a.m. will be permitted, except in case of an emergency, that violates Section 21.49 concerning noise levels. All costs of testing and inspection performed during night, Sunday or holiday work shall be borne by the CONTRACTOR. The CONTRACTOR shall notify all regulatory agencies, including but not limited to the City Police Department, Fire Department, and Code Enforcement Department.

3.17 Injury or Damage Claims:

Should CITY or CONTRACTOR suffer injury or damage to their person or property because of any error, omission or act of the other party or of any of the other party's employees or agents or others for whose acts the other party is legally liable, claim shall be made in writing to the other party within a reasonable time of the first observance of such injury or damage. However, nothing herein shall be deemed to affect the rights, privileges and immunities of City as are set forth in Section 768.28, Florida Statutes.

ARTICLE 4 - CONTRACT DOCUMENTS

4.1 Intent:

The Contract Documents comprise the entire Agreement between the CITY and CONTRACTOR concerning the work. The Contract Documents can be altered only by Change Order. The Contract Documents are complementary; what is called for by one is as binding as if called for by all. It is the intent of the Contract Documents that the CONTRACTOR, for due consideration, shall furnish all equipment, material, supervision and labor, (except as may be specifically noted otherwise) required or necessary to complete the work in total accordance with said Documents. It is the intent of the Drawings and Specifications to describe the Project to be constructed in accordance with the Contract Documents. Any work that may reasonably be inferred from the Drawings or Specifications as being required in order to produce the intended result shall be supplied whether or not it is specifically called for.

4.2 Order of Precedence of Contract Documents:

In resolving differences resulting from conflicts, errors or discrepancies in any of the following Contract Documents, the order of precedence shall be as follows:

1. Permits
2. Change Orders
3. Contract Agreement
4. Specification
5. Drawings

Within the Specifications the order of precedence is as follows:

1. Addenda
2. Section I - Introduction
3. Section II – Special Terms and Conditions
4. General Terms & Conditions
5. Attachment C- Supplementary General Conditions
6. Attachment B - General Conditions
7. Division 1, General Requirements
8. Technical Specifications
9. Referenced Standard Specifications

With reference to the Drawings the order of precedence is as follows:

1. Figures Govern over Scaled Dimensions
2. Detail Drawings Govern over General Drawings
3. Change Order Drawings Govern over Contract Drawings
4. Contract Drawings Govern over Standard or Shop Drawings

4.3 Reference To Standards:

Any reference to standard Specifications, manuals or codes of any organization or governmental authority shall mean the latest edition, in effect as of the Bid Opening Date.

ARTICLE 5 - BONDS AND INSURANCE

5.1 Bid Guarantee:

Bidders maybe required to submit a Bid Guarantee in an amount indicated in the SECTION II - SPECIAL TERMS AND CONDITIONS. This Guarantee may be a Certified or Cashier's Check on a solvent National or State Bank, or a Bid Bond written by a Surety licensed to do business in Florida and rated at least "A", Class X in the latest edition of "Best's Key Rating Guide" published by A.M. Best Company.

5.2 Performance and Payment Bond:

CONTRACTOR shall furnish Performance and Payment Bonds, in amounts equal to the Contract Price as Security for the faithful performance and payment of CONTRACTOR's obligations. The Bond or Bonds shall remain in effect one year after the date of final payment. The Surety must be qualified as specified above in Paragraph 5.1. However, the City reserves the right to require additional bonds as set forth in Article 5 of the Contract.

5.3 Signatures:

All Bonds signed by an Agent must be accompanied by a Certified copy of the authority to act, with said copy having been signed (not typed nor printed) by an Officer of the Surety and carrying the seal of the Surety.

5.4 Insurance Coverage:

Within ten days from Notice of Award the CONTRACTOR shall purchase and maintain such insurance as specified in Article 2.25 of Section II – Special Terms and Requirements as will protect him from claims set forth below which may arise out of or result from the CONTRACTOR's operations under the Contract or Contract Documents, whether such operations be by himself or by any Subcontractor or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable.

5.5 Certificates of Insurance:

Within ten days of award, the Contractor shall obtain a Certificate of Insurance reflecting the necessary coverages as required by the Contract Documents. Certificates of Insurance shall contain a provision that coverages afforded under the policies will not be canceled until at least 30 days prior written notice has been given to the CITY. The City of Hollywood must be named as additional insured on all coverage with the exception of Workmen's Compensation. Policies shall be issued by companies authorized to do business under the Laws of the State of Florida. Policyholders and Financial Ratings must be no less than "A" and Class X respectively in the latest edition of "Best Key Rating Guide", published by A.M. Best Company.

5.6 Insurance Limits of Liability:

The insurance required by this Article shall be written for no less than the level of liability specified in "Insurance Requirements", Section 2 of the Supplementary General Conditions, or required by law, whichever is greater. The insurance shall include contractual liability insurance applicable to the CONTRACTOR's obligations under this contract.

The level required in Section 2 of the Supplementary General Conditions will not be reduced for any reason.

ARTICLE 6 - AVAILABILITY OF LAND; REFERENCE POINTS

6.1 Rights-of-Way:

Lands or Rights-of-Way for the work to be constructed under the Contract will be provided by the CITY. Nothing contained in the Contract Documents shall be interpreted as giving the CONTRACTOR exclusive occupancy of the lands or Rights-of-Way provided. Any additional lands or Rights-of-Way required for construction operations shall be provided by the CONTRACTOR at his own expense; provided, that the CONTRACTOR shall not; and the CITY nor the ENGINEER shall not be liable for any claims or damages resulting from the CONTRACTOR's unauthorized trespass or use of any such properties.

6.2 Permits:

When required by Article 2.16 of the Section II – Special Terms and Conditions, the CONTRACTOR shall secure, from the agencies having jurisdiction, the necessary permits to create obstructions, to make excavations if required under the Contract, and to otherwise encroach upon Rights-of-Way, and to present evidence to the ENGINEER that such permission has been granted, before work is commenced. Regulations and requirements of all agencies concerned shall be strictly adhered to in the performance of the Contract. The enforcement of such requirements under the Contract shall not be made the basis for additional compensation.

6.3 Lines and Grades:

The CONTRACTOR shall furnish all grades and all other lines required for the proper execution of the work.

ARTICLE 7 - CONTRACTOR'S RESPONSIBILITIES

7.1 Laws/Regulations to Be Observed:

The CONTRACTOR shall familiarize himself and comply with all Federal, State, County and CITY laws, by-laws, ordinances or regulations controlling the action or operation of those engaged or employed in the work or affecting material used, and govern himself in accordance with them. He shall indemnify and save harmless the CITY and all of its officers, agents and employees against any claims or liability arising from or based on the violation of any such laws, by-laws, ordinances, regulations, orders or decrees, whether by himself or his employees or Subcontractors.

7.2 Indemnification of City:

- (a) Refer to ARTICLE 1.46 – INDEMNIFICATION AND HOLD HARMLESS AGREEMENT of Section IV – General Terms and Conditions.
- (b) Refer to ARTICLE 1.47 – PATENT AND COPYRIGHT INDEMNIFICATION of Section IV – General Terms and Conditions.
- (c) The provisions of (a) and (b) above shall survive the expiration or earlier termination of the Contract Documents.

7.3 Guarantee of Payments:

The CONTRACTOR guarantees the payments of all just claims for materials, supplies, tools, labor and other just claims against him, or any Subcontractor in connection with this Contract, and his bond will not be released by final acceptance and payment by the CITY unless all such claims are paid or released.

7.4 Permits and Licenses:

The CONTRACTOR shall obtain all permits and licenses required by the Contract Documents. A copy of the permit(s) and such conditions and requirements thereon are a part of the Contract Documents. Failure to obtain such permits or licenses shall subject the CONTRACTOR to the provisions of the South Florida Building Code, Broward Edition.

7.5 Emergencies:

In emergencies affecting the safety or protection of persons or the work or property at the site or adjacent thereto, CONTRACTOR, without special instruction or authorization from ENGINEER or CITY, is obligated to act to prevent threatened damage, injury or loss. CONTRACTOR shall give ENGINEER prompt written notice of any significant changes in the work or deviations from the Contract Documents caused thereby.

7.6 Substitutes or "Or Equal":

A. Substitutes or "Or-Equal" Materials or Equipment:

Whenever materials or equipment are specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular supplier the naming of the item is intended to establish the type, function and quality required. Unless the name is followed by words indicating that no substitution is permitted, materials or equipment of other Suppliers may be accepted by the ENGINEER if sufficient information submitted by the CONTRACTOR to allow the ENGINEER to determine that the material or equipment proposed is equivalent or equal to that named. The ENGINEER will be allowed 30 days within which to evaluate each proposed substitute. The ENGINEER will be the sole judge of acceptability, and NO SUBSTITUTE WILL BE ORDERED, INSTALLED OR UTILIZED WITHOUT THE ENGINEER'S PRIOR WRITTEN ACCEPTANCE which will be evidenced by either a Change Order or an approved set of Shop Drawings. Requests for review of substitute items of material and equipment will not be accepted by the ENGINEER from anyone other than the CONTRACTOR. The procedure for review by the ENGINEER is as follows:

If the CONTRACTOR wishes to furnish or use a substitute item of material or equipment, the CONTRACTOR shall make written application to the ENGINEER for acceptance thereof, certifying that the proposed substitute will perform adequately the functions and achieve the results called for by the general design, be similar and of equal substance to that specified and be suited to the same use as that specified. In addition, the application shall

1. State that the evaluation and acceptance of the proposed substitute will not prejudice the CONTRACTOR's achievement of completion on time.
2. State whether or not acceptance of the substitute for use in the WORK will require a change in any of the Contract Documents to adapt design to the proposed substitute. The CONTRACTOR shall be responsible for any extra design adaptation costs associated with a proposed substitute.
3. State whether or not incorporation or use of the substitute in connection with the work is subject to payment of any license fee or royalty.
4. Provide complete substitute identification and description, including manufacturer's and local distributor's name and address, performance and test data, and reference standards.

5. Provide samples, as required by ENGINEER.
 6. Provide name and address of similar projects on which the proposed substitute has been used, and date of installation.
 7. Identify all variations of the proposed substitute from that specified.
 8. Indicate available maintenance, repair and replacement service.
 9. Submit an itemized estimate of all costs that will result directly or indirectly from acceptance of such substitute, including costs of redesign and claims of other Contractors affected by the resulting change. The CONTRACTOR shall be responsible for the costs of redesign and claims of other Contractors.
 10. Provide any additional data about the proposed substitute as the ENGINEER may require of the CONTRACTOR.
- B. Substitute means, method, technique, sequence or procedure of construction:
- If a specific means, method, technique, sequence or procedure of construction is indicated in or required by the Contract Documents, the CONTRACTOR may furnish or utilize a substitute means, method, sequence, technique or procedure of construction acceptable to the ENGINEER, if the CONTRACTOR submits sufficient information to allow the ENGINEER to determine that the substitute proposed is equivalent to that indicated or required by the Contract Documents. The procedure for review by the ENGINEER will be similar to that provided in Paragraph 7.6 A.
- C. 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.
- D. The ENGINEER will record time required by the ENGINEER and/or the ENGINEER's consultants in evaluating substitutions proposed by the CONTRACTOR and in making changes in the Contract Documents occasioned thereby. Whether or not the ENGINEER accepts a proposed substitute, THE CONTRACTOR SHALL REIMBURSE THE CITY FOR THE CHARGES OF THE ENGINEER AND THE ENGINEER'S CONSULTANTS FOR EVALUATING EACH PROPOSED SUBSTITUTE.
- E. Any and all costs which result from changes to/adaptations of the work shall be paid by the CONTRACTOR including but limited to design, materials, installation, etc.

7.7 Shop Drawings:

Shop Drawing submittals shall be as follows:

- A. The CONTRACTOR shall submit a sufficient number of copies of each Shop Drawing to enable the ENGINEER to retain three copies unless additional copies are specified in the Contract Documents. Resubmissions of Shop Drawings shall be made in the same quantity until final approval is obtained.
- B. The CONTRACTOR shall submit Shop Drawings for all equipment, apparatus, machinery, fixtures, piping, fabricated structures, manufactured articles and structural components Manufacturer's Certified Affidavit that the item supplied complies with the design Specifications, and all other submittal requirements.
- C. Shop Drawings for structural components, electrical or mechanical systems shall be Certified by a Registered Engineer of the discipline involved.
- D. The CONTRACTOR shall thoroughly review and check the Shop Drawings, and each and every copy shall show his approval thereon. If the Shop Drawings show or indicate departures from the Contract requirements, the CONTRACTOR shall make specific mention thereof in his letter of transmittal. Failure to point out such departures shall not relieve the CONTRACTOR from his responsibility to comply with the Drawings and Specifications.
- E. No approval will be given to partial submittals of Shop Drawings for items which interconnect and/or are interdependent. It is the CONTRACTOR's responsibility to assemble the Shop Drawings for all such interconnecting and/or interdependent items, check them himself and then make one submittal to the ENGINEER along with his comments as to compliance, non-compliance, or features requiring special attention.
- F. If catalog sheets or prints of manufacturer's standard drawings are submitted as Shop Drawings, any additional information or changes on such Drawings shall be typewritten or lettered in ink.
- G. The CONTRACTOR shall keep one set of Shop Drawings marked with the ENGINEER's approval at the job site at all times.
- H. Where a Shop Drawing or sample is required by the Specifications, no related work shall be commenced until the submittal has been reviewed and approved by the ENGINEER.
- I. Approval of the Shop Drawings shall constitute approval of the subject matter thereof only, and not of any structure, material, equipment or apparatus shown or indicated. The approval of the Shop Drawings will be general and shall not relieve the CONTRACTOR of responsibility for the accuracy of such Drawings, nor for the proper fitting and construction of the work, nor for the furnishing of materials or work required by the contract and not indicated on the Drawings. Approval shall not relieve the CONTRACTOR from responsibility for errors or omissions of any sort on the Shop Drawings.

7.8

Personnel:

A. Supervision and Superintendence:

1. The CONTRACTOR shall supervise and direct the work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the work in accordance with the Contract Documents. The CONTRACTOR shall be solely responsible for the means, methods, techniques, sequences and procedures of construction, but the CONTRACTOR shall not be solely responsible for the negligence of others in the design or selection of a specific means, method, technique, sequence or procedure of construction which is indicated in and required by the Contract Documents. The CONTRACTOR shall be responsible to see that the finished work complies accurately with the Contract Documents.
2. The CONTRACTOR shall keep on the work at all times during its progress a competent resident Superintendent fluent in both oral and written communication in the English language, who shall not be replaced without written notice to the ENGINEER except under extraordinary circumstances. The Superintendent will be the CONTRACTOR's representative at the site and shall have authority to act on behalf of the CONTRACTOR. All communications given to the Superintendent shall be as binding as if given to the CONTRACTOR.

B. Workforce:

1. None but skilled workers shall be employed on work requiring special qualifications. When required in writing by the ENGINEER, the CONTRACTOR or any Subcontractor shall discharge any person who is, in the opinion of the ENGINEER, incompetent, disorderly or otherwise unsatisfactory, and shall not again employ such discharged person on the work except with the consent of the ENGINEER. Such discharge shall not be the basis of any claim for damages against the CITY or any CITY agents.
2. With respect to all skilled, semi-skilled and unskilled workers employed on the Project under this Contract, preference in employment shall be given to persons residing in Hollywood when such persons are available and qualified to perform the work to which the employment relates. No person shall be employed in violation of the State or National Labor Laws. No person under the age of 16 years shall be employed on a Project under the Contract. No person whose age or physical condition is such as to make his employment dangerous to his health or safety or to the health or safety of others shall be employed on the Project under this Contract; provided that this shall not operate against the employment of physically handicapped persons, otherwise employable where such persons may be safely assigned to work which they can ably perform. No person currently serving sentences in a penal or correctional institution and no inmate of an institution for

mentally defective shall be employed on a Project under this Contract without specific approval of the ENGINEER.

3. No discrimination shall be made in the employment of persons on the work by the CONTRACTOR or by any Subcontractor under him, because of the race, color, sex, age or religion of such persons, and there shall be full compliance with the provisions of applicable State and Federal laws in this regard.

7.9 Safety and Protection:

A. Federal Safety and Health Regulations:

The CONTRACTOR and Subcontractors shall comply with the provisions of the Occupational Safety and Health Standards, promulgated by the Secretary of Labor under the "Occupational Safety and Health Act of 1970".

B. Responsibilities:

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:

1. All employees on the work and other persons who may be affected thereby.
2. All the work and all materials or equipment to be incorporated therein, whether in storage on or off the site.
3. Other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocating or replacement in the course of construction.

C. Designated Safety Officer:

The CONTRACTOR shall designate a responsible member of his organization at the site whose duty shall be the prevention of accidents. This person shall be the CONTRACTOR's Superintendent unless otherwise designated in writing by the CONTRACTOR to the ENGINEER.

D. Protection of the Work:

Until acceptance of the work by the CITY, it shall be under the charge and in care of the CONTRACTOR and he shall take every necessary precaution against injury or damage to the work by action of the elements or from the execution or from the non-execution of the work. The CONTRACTOR shall rebuild, restore and make good, at his own expense, all injuries or damages to any portion of the work occasioned by any of the above causes before its completion and acceptance.

7.10 Traffic Control, Public Safety and Convenience:

- A. The CONTRACTOR shall at all times conduct his work so as to assure the least possible obstruction to traffic and inconvenience to the general public, and provide adequate protection of persons and property in the vicinity of the work.
- B. WHEN THE NORMAL FLOW OF TRAFFIC WILL BE IMPAIRED OR DISRUPTED IN ANY MANNER ON ANY STREET, THE CONTRACTOR SHALL NOTIFY THE POLICE TRAFFIC SERGEANT AT 921-3610 AT LEAST 48 HOURS IN ADVANCE.
- C. Streets shall not be closed, except when and where directed by the ENGINEER, and whenever a street is not closed the work must be conducted with the provision for safe passageway for traffic at all times. The CONTRACTOR shall make all necessary arrangements concerning maintenance of traffic and selection of detours required.
- D. When permission has been granted to close an existing roadway, or portion thereof, the CONTRACTOR shall furnish and erect signs, barricades, lights, flags and other protective devices as necessary subject to the approval of the ENGINEER. From sunset to sunrise, the CONTRACTOR shall furnish and maintain as many yellow lights as the ENGINEER may direct.
- E. During working hours the CONTRACTOR shall furnish watchmen in sufficient numbers to protect and divert the vehicular and pedestrian traffic from working areas closed to traffic, or to protect any new work. Failure to comply with this requirement will result in the ENGINEER shutting down the work until the CONTRACTOR shall have provided the necessary protection.
- F. No separate payment will be made for such signs, barricades, lights, flags, watchmen or other protective devices as required, with all costs thereof deemed to be included in the prices bid for the various items scheduled in the bid.
- G Sidewalks, gutters, drains, fire hydrants and private drives shall, in so far as practicable, be kept in condition for their intended uses. While the work is actually going on at any location, as much as half the street width at that location may be barricaded to exclude traffic entirely, but street traffic shall not be obstructed needlessly. Fire hydrants on or adjacent to the work shall be kept accessible to fire apparatus at all times, and no material or obstruction shall be placed within ten feet of any such hydrant.
- H. Construction material stored upon the public street shall be placed so as to cause as little obstruction to the general public as is reasonably possible.

7.11 Use of Explosives:

When the use of explosives is necessary for the prosecution of the work, the CONTRACTOR shall observe the utmost care so as not to endanger life or property, and whenever directed, the number and size of charges shall be limited. All explosives shall be stored in a secure manner and all such storage places shall be marked clearly "DANGEROUS EXPLOSIVES" and shall be in care of a competent watchman at all times. The CONTRACTOR must familiarize himself with all laws and ordinances pertaining thereto, and govern himself and his employees accordingly.

7.12 Loading of Structures:

The CONTRACTOR shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall the CONTRACTOR subject any part of the work or adjacent property to stresses or pressures that will endanger it.

7.13 Concerning Subcontractors:

- A. The CONTRACTOR, with his own forces, shall perform no less than 25% of the work as determined by the Contract price. Each Subcontractor shall be properly licensed for the type of work he is to perform.
- B. A copy of each Sub-Contract shall be filed promptly with the ENGINEER upon request. Each Sub-Contract shall contain a reference to the Contract between the CITY and the CONTRACTOR, and the terms and conditions of the Contract shall be made a part of each Sub-Contract. Each Sub-Contract shall provide for annulment of same by the CONTRACTOR upon written order of the ENGINEER if the Subcontractor fails to comply with the requirements of this Contract.
- C. The CONTRACTOR shall be responsible to the CITY and ENGINEER for the acts and omissions of his Sub-Contractors and their employees to the same extent as he is responsible for the acts and omissions of his own employees. Nothing contained in this Contract shall create any contractual relationship between any Subcontractor and the CITY or ENGINEER nor relieve the CONTRACTOR of any liability or obligation under this Contract.

7.14 Materials and Equipment:

- A. Material for the Work:
 - 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 the work.
 - 2. Unless otherwise specified, shown or permitted by the ENGINEER, all material and equipment incorporated in the work shall be new and of current manufacture. The ENGINEER may request the CONTRACTOR to furnish manufacturer's certificates to this effect.

3. The ENGINEER may require any or all materials to be subjected to test by means of samples or otherwise, at production points or after delivery. The CONTRACTOR shall afford such facilities as the ENGINEER may require for collecting and forwarding samples, which samples shall be furnished by the CONTRACTOR without charge. The CONTRACTOR shall furnish evidence satisfactory to the ENGINEER that the materials and finished articles have passed the required test prior to the incorporation of such materials and finished articles in the work. Unless otherwise provided, the cost of such inspection and testing shall be as provided in Article 12.2.
4. All packaged manufactured products for use on the work shall be delivered to the work in their original, unopened packages, bearing thereon the manufacturer's name and the brand name of the product.
5. Wherever any product or material is selected to be used on the work, all such products or material shall be of the same brand and manufacture throughout the work.
6. All equipment, tools and machinery used for handling material or executing any part of the work shall be maintained in a satisfactory working condition. All equipment utilized on any portion of the work shall be such that no injury to personnel, the work, adjacent property or other objects will result from its use.
7. All materials and equipment shall be applied, installed, connected, erected, used, cleaned and conditioned in accordance with the instructions of the applicable manufacturer, fabricator, supplier or distributor, except as otherwise provided in the Contract Documents.

B. Storage of Materials:

1. All materials and equipment including that ordered by the CITY designed for permanent installation in the work shall be properly stored by the CONTRACTOR to insure protection against deterioration of any type. These materials shall be placed as to cause a minimum of inconvenience to other contractors on the work and to the public. The storage piles shall be arranged to facilitate inspections, and any deterioration shall be grounds for rejection.
2. Materials stored in public Rights-of-Way, shall be stored in such a manner so as to be compatible with the Traffic Control requirements set forth in Paragraph 7.10. Materials shall be stored so as not to deny access to public or private property. Stored materials shall be adequately marked with barricades and/or flashing warning lights, where necessary, so as to protect the materials from damage and to protect the public health, safety and welfare.
3. Lawns, grass plots or other private property shall not be used for storage purposes without written permission of the Owner or Lessee of that private

property. Should the CONTRACTOR desire to store equipment or materials of any kind on the property of the CITY, he must obtain permission from the ENGINEER. The CITY reserves the right to order materials to be removed or relocated in such approved storage areas, if necessary.

4. The protection of stored materials shall be the CONTRACTOR's responsibility and the CITY OF HOLLYWOOD shall not be liable for any loss of materials, by theft or otherwise, nor for any damage to the stored materials.

C. **Salvage of Materials and Equipment:**

The CITY reserves the right to retain title to all soil, sand, stone, gravel, equipment, machinery or any other material that was a part of the structure, site or Right- of-Way and which was developed from excavations or other operations connected with the work. The CONTRACTOR will be permitted to use in the work, without charge, any such material which meets the requirements of the Contract Documents. For that material which the CITY desires to retain the CONTRACTOR shall, at his expense, transfer to a site within the CITY as designated by the ENGINEER. That material which the CITY does not wish to retain shall be the property of the CONTRACTOR and removed from the site at CONTRACTOR's expense.

7.15 Temporary Utilities:

The CONTRACTOR shall provide and maintain at his own expense, all water, power, telephone and sanitary facilities as required to comply with State and/or local Codes and Regulations. If water, including that for testing is required, it is the CONTRACTOR's responsibility to arrange through the CITY Water Department for a water meter. A deposit to be paid by the CONTRACTOR is required for meter rental and all water shall be purchased at the prevailing rate.

7.16 Review of Records:

The CONTRACTOR shall allow and permit the ENGINEER or his duly authorized representative to inspect and review all payrolls, records of personnel, conditions of employment, invoice of materials, books of accounts and other relevant data and records pertinent to the CONTRACT and Sub-Contracts.

7.17 Use of Premises:

CONTRACTOR shall confine construction equipment, the storage of materials and equipment and the operations of workmen to areas permitted by law, ordinances, permits or required by the Contract Documents, and shall not interfere with the premises or operation of the City Utilities facilities with construction equipment or other materials or equipment. Construction which interferes with Plant Operations shall be fully coordinated and approved by the ENGINEER.

7.18 CONTRACTOR's Daily Reports:

Except where otherwise provided, the CONTRACTOR shall complete a daily report indicating manpower, major equipment, Subcontractors, etc., involved in the performance of the work. The daily report shall be completed on forms approved by the ENGINEER, and shall be submitted to the ENGINEER at the conclusion of each work day.

7.19 Record Documents:

The CONTRACTOR shall keep one record copy of all Specifications, Drawings, Addenda, Modifications, Shop Drawings and samples at the site, in good order and annotated to show all changes made during the construction process. These shall be available to ENGINEER for examination and shall be delivered to ENGINEER upon completion of the work.

7.20 Cleanliness of the Site:

During the progress of the work, The CONTRACTOR shall keep the premises free from accumulations of waste materials, rubbish and other 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.

7.21 Dust Control:

It shall be the CONTRACTOR's responsibility to control dust by watering as directed by the ENGINEER. The water used shall be paid for by the CONTRACTOR. Should the CONTRACTOR fail to control dust to the satisfaction of the ENGINEER, the CITY will control the dust by whatever means the CITY desires and the CONTRACTOR shall pay all expenses incurred by the CITY associated with the control of the dust.

7.22 Continuing the Work:

The CONTRACTOR shall carry on the work and maintain the Progress Schedule during all disputes or disagreements with the CITY. No work shall be delayed or postponed pending resolution of any disputes or disagreements, except as the CONTRACTOR and the CITY may otherwise agree in writing.

7.23 Indemnification:

In consideration of the amount listed in the Bid Form and other valuable consideration, the Contractor shall defend, indemnify and save harmless the CITY, its officers, agents, and employees from or on account of any personal injury, loss of life or damage to property received or sustained by any person or persons during or on account of any operations connected with the construction of this Project; or by or in consequence of any negligence (excluding negligence of the CITY), in connection with the same; or by use of any improper materials or by or on account of any use of any improper materials or by or on account of any act or omission of the said Contractor or his subcontractor, agents, servants or employees. Contractor agrees to indemnify and save harmless the

CITY against any liability arising from or based upon the violation of any federal, state, county or city laws, by-laws, ordinances or regulations by the Contractor, his subcontractor, agents, servants or employees. Contractor further agrees to indemnify and save harmless the CITY from all such claims and fees, and from any and all suits and actions of every name and description that may be brought against the CITY on account of any claims, fees, royalties, or costs for any invention or patent, and from any and all suits and actions that may be brought against the CITY for the infringement of any and all patents or patent rights claimed by any person, firm, or corporation.

The indemnification provided above shall obligate the Contractor to defend at his own expense or to provide for such defense, at the CITY's option, any and all claims or liability and all suits and actions of every name and description that may be brought against the Owner which may result from the operations and activities under this Contract whether the construction operations be performed by the Contractor, his subcontractor or by anyone directly or indirectly employed by either.

Nothing in this indemnification shall be deemed to affect the rights, privileges or immunities of the CITY as set forth in Section 768.28, Florida Statutes.

The CITY will pay to the Contractor the specific consideration, in the amount stated in the Bid Form. The Contractor shall acknowledge the receipt of payment and other good and valuable consideration from the Owner which has been paid to him as specific consideration for the indemnification provided herein and in accordance with the provisions of Chapter F.S.A., Section 725.06.

ARTICLE 8 - CITY'S RESPONSIBILITIES

8.1 Communications:

The CITY shall issue all communications to the CONTRACTOR through the ENGINEER.

8.2 Furnish Contract Documents:

The CITY shall furnish the number of Contract Documents as specified in the Supplementary General Conditions to the CONTRACTOR at no cost. Referenced Standard Specifications Manuals, guidebooks, etc., will not be provided.

8.3 Furnish Right-of-Way:

The CITY shall furnish the necessary land or Right-of-Way on which the work is to be accomplished, and will provide lines and grades as specified in Article 6.

8.4 Timely Delivery of Materials:

The CITY shall be responsible for the delivery of any CITY furnished material, equipment or labor as specified in the Contract Documents.

ARTICLE 9 - ENGINEER'S STATUS

9.1 Authority of the Engineer:

- A. The general supervision of the execution of this Contract is vested in the ENGINEER who is the CITY's sole representative during the construction period. The instructions of the ENGINEER are to be strictly and promptly followed in every case. The CONTRACTOR's representative (Article 7.8 A. 1.) shall be responsible for the execution of any instructions given by the ENGINEER during the absence of the CONTRACTOR.
- B. The ENGINEER is the initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the work. Claims, disputes and other matters relating to the acceptability of work or requirements of the Contract Documents shall be referred in writing to the ENGINEER within 15 days of the event, with a request for a formal decision, which the ENGINEER will render in writing within a reasonable time. This rendering of a decision by the ENGINEER will be a condition precedent to any exercise by the CITY or CONTRACTOR of rights or remedies as either may otherwise have under the Contract Documents or at law in respect to any such claim, dispute or other matter.
- C. The ENGINEER will issue with reasonable promptness any written clarifications or interpretations of the Contract Documents as he shall deem necessary, which shall be consistent with or reasonably inferable from the overall intent of the Contract Documents. If, as a result of a clarification or interpretation, either the CONTRACTOR or ENGINEER believes a Change Order is justified, it shall be submitted.
- D. The ENGINEER has approval authority over the acceptability of all material or equipment furnished, Shop Drawings, Change Orders, work performed and the rate of progress of the work. Verification of the quantities of work performed for pay purposes is the responsibility of the ENGINEER.
- E. The ENGINEER also has the authority to disapprove or reject work which is defective, and may require special inspection or testing of the work, whether or not it is fabricated, installed or completed.
- F. The ENGINEER has the authority to suspend the work wholly or in part for such period or periods as may be deemed necessary, due to the unsuitable prosecution of the work, or for such time as is necessary due to failure on the part of the CONTRACTOR to carry out orders given or perform any or all provisions of the Contract. The CONTRACTOR shall not suspend the work and shall not remove any equipment, tools, lumber or other materials without the written permission of the ENGINEER.

9.2 Access to the Work:

The ENGINEER is to have free access to the materials and work at all times for laying out, measuring or inspecting same, and the CONTRACTOR is to afford him all necessary facilities and assistance for so doing.

9.3 Limitations on The ENGINEER's Responsibilities:

- A. Neither the ENGINEER's authority to act under this Article or elsewhere in the Contract Documents nor any decision made by the ENGINEER in good faith either to exercise or not exercise such authority shall give rise to any duty or responsibility of the ENGINEER to the CONTRACTOR, any Subcontractor, any manufacturer, fabricator, supplier or distributor or any of their agents or employees or any other person performing any of the work.
- B. Whenever in the Contract Documents the terms "as ordered", "as directed", "as required", "as allowed" or terms of like effect or import are used, or the adjectives "reasonable", "suitable", "acceptable", "proper" or "satisfactory" or adjectives of like effect or import are used, to describe requirement, direction, review or judgment of the ENGINEER as to the work, it is intended that such requirement, direction, review or judgment will be solely to evaluate the work for compliance with the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective never indicates that the ENGINEER has authority to supervise or direct performance of the work.
- C. The ENGINEER will not be responsible for the CONTRACTOR's means, methods, techniques, sequences or procedures of construction, nor the safety precautions and programs incident thereto, and the ENGINEER will not be responsible for the CONTRACTOR's failure to perform the work in accordance with the Contract Documents.
- D. The ENGINEER will not be responsible for the acts or omissions of the CONTRACTOR or of any Subcontractors, or of the agents or employees of any CONTRACTOR or subcontractor, or of any other persons at the site or otherwise performing any of the work.

9.4 Inspectors:

- A. Inspectors employed by the CITY assist the ENGINEER in ascertaining the work conforms to the Contract Documents and are authorized to inspect all work done and material furnished as representatives of the ENGINEER. Inspectors shall be stationed at the site of the work to report to the ENGINEER as to the progress of the work and the quality of workmanship and material.
- B. In case of any dispute arising between the CONTRACTOR and the Inspector, the Inspector shall have the authority to reject material or to suspend the work until the question of issue can be referred to and decided upon by the ENGINEER.
- C. If the CONTRACTOR refuses to suspend operation on verbal order, the Inspector shall issue a written order giving the reason for shutting down the work.

After placing the order in the hands of the man in charge, the Inspector shall immediately leave the job. work done during the absence of the Inspector, after such written notice, will not be accepted nor paid for.

- D. Inspectors are not authorized to revoke, alter, enlarge, relax or release any requirements of these Contract Documents, nor to issue instructions contrary to them. Inspectors shall in no case act as foreman or perform other duties for the CONTRACTOR, nor interfere with management of the work by the latter. Any instructions which Inspectors may give the CONTRACTOR shall in no way be construed as releasing the CONTRACTOR from fulfillment of the terms of the Contract.
- E. The payment of any compensation, whatever may be its character or form, or the giving of any gratuity, or the granting of any valuable favor, by the CONTRACTOR to any Inspector, directly or indirectly, is strictly prohibited and any such act on the part of the CONTRACTOR will constitute a violation of this Contract and may subject the CONTRACTOR to other penalties provided for by law or ordinance.

9.5 Inspections:

- A. The ENGINEER will make, or have made, such inspections and tests as he deems necessary to assure that the work is being accomplished in accordance with the requirements of the Contract. In the event such Inspections or tests reveal non-compliance with the requirements of the Contract, the CONTRACTOR shall bear the cost of such corrective measures as well as the cost of subsequent reinspection and retesting.
- B. Work done in the absence of a prescribed inspection may be required to be removed and replaced under proper inspection. The entire cost of removal and replacement, including the cost of all material which may be furnished by the CITY and used in the work thus removed, shall be borne by the CONTRACTOR, regardless of whether the work removed is found to be defective or not. Work covered up without the authority of the ENGINEER, shall, upon order of the ENGINEER, be uncovered to the extent required, and the CONTRACTOR shall similarly bear the entire cost of performing all the work and furnishing all the material necessary for the removal of the covering and its subsequent replacement.
- C. Unless otherwise provided, the cost of inspection and all inspection fees imposed by public agencies other than the fees associated with the issuance of the Master Building Permit by the City of Hollywood shall be paid by the CONTRACTOR.
- D. No inspection nor any failure to inspect at any time or place shall relieve the CONTRACTOR from any obligation to perform all of the work in strict conformance with the requirements of the Contract Documents.

ARTICLE 10 - CHANGES IN THE WORK/CONTRACT PRICE

10.1 Changes in the Work or Terms of Contract Documents:

- A. Without invalidating the Contract and without notice to any surety CITY reserves and shall have the right, from time to time to make such increases, decreases or other changes in the character or quantity of the Work as may be considered necessary or desirable to complete fully and acceptably the proposed construction in a satisfactory manner. Any extra or additional work within the scope of this Project must be accomplished by means of appropriate Clarifications, Field Orders, or Change Orders.
- B. Any changes to the terms of the Contract Documents must be contained in a written document, executed by the parties hereto, with the same formality and of equal dignity prior to the initiation of any work reflecting such change.

This section shall not prohibit the issuance of Change Orders executed only by CITY as hereinafter provided.

10.2 Supplemental Instructions - Clarifications:

- A. The CITY, through the ENGINEER, shall have the right to approve and issue Clarifications setting forth written interpretations of the intent of the Contract Documents and ordering minor changes in Work execution, providing the Clarifications involve no change in the Contract Price or the Contract Time.
- B. The ENGINEER shall have the right to approve and issue Clarifications setting forth written orders, instructions, or interpretations concerning the Contract Documents or its performance, provided such Clarifications involve no change in the Contract Price or the Contract Time.

10.3 Field Orders / Change Orders:

- A. Changes in the quantity or character of the Work within the scope of the Project which are not properly the subject of Clarifications, including all changes resulting in changes in the Contract Price or the Contract Time, shall be authorized only by Field Orders or Change Orders approved in advance and issued in accordance with the provisions of the CITY Procurement Code, as amended from time to time.
- B. CONTRACTOR shall not start work on any changes requiring an increase in the Contract Price or the Contract Time until a Field Order or Change Order setting forth the adjustments is approved by the CITY. Upon receipt of a Change Order CONTRACTOR shall promptly proceed with the work set forth within the document.

- C. Field Orders shall be issued for change in Contract Price related to Cost Allowances specifically included on the Proposal Bid Form. Change Orders shall be issued when required for all other Contract Price Changes. Hereinafter, the term "Change Order(s)" shall be used to include "Change Orders" and "Field Orders" with the exception that Field Order shall not be used for any Contract Time adjustments.
- D. In the event satisfactory adjustment cannot be reached for any item requiring a change in the Contract Price or Contract Time, and a Change Order has not been issued, CITY reserves the right at its sole option to either terminate the Contract as it applies to the items in question and make such arrangements as may be deemed necessary to complete the disputed work; or the work shall be performed on the "cost of work" basis as described in Article 10.4.
- E. On approval of any Contract change increasing the Contract Price, CONTRACTOR shall ensure that the performance bond and payment bond are increased so that each reflects the total Contract Price as increased.
- F. Under circumstances determined necessary by CITY, Change Orders may be issued unilaterally by CITY.

10.4 Value of Change Order Work:

- A. The value of any work covered by a Change Order or of any claim for an increase or decrease in the Contract Price shall be determined in one of the following ways:
 - A.1 Where the work involved is covered by unit prices contained in the Contract Documents, by application of unit prices to the quantities of items involved, subject to the provisions of Article 10.4.G.
 - A.2 By mutual acceptance of a lump sum which CONTRACTOR and CITY acknowledge contains a component for overhead and profit.
 - A.3 On the basis of the "cost of work," determined as provided in this Article, plus a CONTRACTOR's fee for overhead and profit which is determined as provided in Article 10.4.D.
- B. The term "cost of work" means the sum of all direct costs necessarily incurred and paid by CONTRACTOR in the proper performance of the Work described in the Change Order. Except as otherwise may be agreed to in writing by CITY, such costs shall be in amounts no higher than those prevailing in the locality of the Project, shall include only the following items and shall not include any of the costs itemized in Article 10.4.C.
 - B.1 Payroll costs for employees in the direct employ of CONTRACTOR in the performance of the work described in the Change Order under schedules of job classifications agreed upon by CITY and

CONTRACTOR. Payroll costs for employees not employed full time on the work covered by the Change Order 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 the cost of fringe benefits which shall include social security contributions, unemployment, excise and payroll taxes, workers' or workmen's compensation, health and retirement benefits, bonuses, sick leave, vacation and holiday pay application thereto. Such employees shall include superintendents and foremen at the site. The expenses of performing the work after regular working hours, on Sunday or legal holidays shall be included in the above to the extent authorized by CITY.

- B.2 Cost of all materials and equipment furnished and incorporated in the work, including costs of transportation and storage thereof, and manufacturers' field services required in connection therewith. All cash discounts shall accrue to CONTRACTOR unless CITY deposits funds with CONTRACTOR with which to make payments, in which case the cash discounts shall accrue to CITY. All trade discounts, rebates and refunds, and all returns from sale of surplus materials and equipment shall accrue to CITY and CONTRACTOR shall make provisions so that they may be obtained. Rentals of all construction equipment and machinery and the parts thereof whether rented from CONTRACTOR or others in accordance with rental agreements approved by CITY with the advice of ENGINEER and the costs of transportation, loading, unloading, installation, dismantling and removal thereof, all in accordance with the terms of said agreements. The rental of any such equipment, machinery or parts shall cease when the use thereof is no longer necessary for the work.
- B.3 Payments made by CONTRACTOR to Subcontractors for work performed by Subcontractors, If required by CITY, CONTRACTOR shall obtain competitive bids from Subcontractors acceptable to CONTRACTOR and shall deliver such bids to CITY who will then determine, with the advice of ENGINEER, which bids will be accepted. If the Subcontract provides that the Subcontractor is to be paid on the basis of cost of the work plus a fee, the Subcontractor's cost of the work shall be determined in the same manner as CONTRACTOR'S cost of the work. All Subcontractors shall be subject to the other provisions of the Contract Documents insofar as applicable.
- B.4 Cost of special engineers, including, but not limited to, engineers, architects, testing laboratories, and surveyors employed for services specifically related to the performance of the work described in the Change Order.

B.5 Supplemental costs including the following:
The proportion of necessary transportation, travel and subsistence expenses of CONTRACTOR's employees incurred in discharge of duties connected with the work except for local travel to and from the site of the work.

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 workmen, which are consumed in the performance of the work, and cost less market value of such items used but not consumed which remains the property of CONTRACTOR.

Sales, use, or similar taxes related to the work, and for which CONTRACTOR is liable, imposed by any governmental authority. Deposits lost for causes other than CONTRACTOR's negligence; royalty payments and fees for permits and licenses. The cost of utilities, fuel, and sanitary facilities at the site. Receipted 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. Cost of premiums for additional bonds and insurance required because of changes in the work.

C. The term "cost of the work" shall not include any of the following:

C.1 Payroll costs and other compensation of CONTRACTOR's officers, executives, principals (of partnership and sole proprietorships), general managers, engineers, architects, estimators, lawyers, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks and other personnel employed by CONTRACTOR whether at the site or in its principal or a branch office for general administration of the work and not specifically included in the agreed-upon schedule of job classifications referred to in this Article, all of which are to be considered administrative costs covered by CONTRACTOR's fee.

C.2 Expenses of CONTRACTOR's principal and branch offices other than CONTRACTOR's office at the site.

C.3 Any part of CONTRACTOR's capital expenses, including interest on CONTRACTOR's capital employed for the work and charges against CONTRACTOR for delinquent payments.

C.4 Cost of premiums for all Bonds and for all insurance whether or not CONTRACTOR is required by the Contract Documents to purchase and maintain the same, except for additional bonds and insurance required because of changes in the work.

C.5 Costs due to the negligence or neglect of CONTRACTOR, any Subcontractors, 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.

- C.6 Other overhead or general expense costs of any kind and the cost of any item not specifically and expressly included in this Section.
- D. CONTRACTOR's fee allowed to CONTRACTOR for overhead and profit shall be determined as follows:
 - D.1 A mutually acceptable fixed fee or if none can be agreed upon,
 - D.2 A fee based on the following percentages of the various portions of the cost of the work:

For costs incurred under Article 10.4.B.1, CONTRACTOR's fee shall not exceed ten percent (10%).

For costs incurred under Article 10.4.B.3 and B.4, CONTRACTOR's fee shall not exceed seven and one half percent (7.5%); and if a subcontract is on the basis of cost of the work plus a fee, the maximum allowable to the Subcontractor as a fee for overhead and profit shall not exceed ten percent (10%);

No fee shall be payable on the basis of costs itemized under Article 10.4.B.5 and Article 10.4.C.
- E. The amount of credit to be allowed by CONTRACTOR to CITY for any such change which results in a net decrease in cost, will be the amount of the actual net decrease. When both additions and credits are involved in anyone change, the combined overhead and profit shall be figured on the basis of the net increase, if any, however, CONTRACTOR shall not be entitled to claim lost profits for any Work not performed.
- F. Whenever the cost of any work is to be determined pursuant to Articles 10.4.B and 10.4.C, CONTRACTOR will submit in a form acceptable to CONSULTANT an itemized cost breakdown together with the supporting data.
- G. Where the quantity of any item of the Work that is covered by a unit price is increased or decreased by more than twenty percent (20%) from the quantity of such work indicated in the Contract Documents, an appropriate Change Order shall be issued to adjust the unit price, if warranted.
- H. Whenever a change in the Work is to be based on mutual acceptance of a lump sum, whether the amount is an addition, credit or no change-in-cost, CONTRACTOR shall submit an initial cost estimate acceptable to ENGINEER and CITY.
 - H.1 Breakdown shall list the quantities and unit prices for materials, labor, equipment and other items of cost.
 - H.2 Whenever a change involves CONTRACTOR and one or more Subcontractors and the change is an increase in the Contract Price,

overhead and profit percentage for CONTRACTOR and each Subcontractor shall be itemized separately.

- I. Each Change Order must state within the body of the Change Order whether it is based upon unit price, negotiated lump sum, or "cost of the work."

10.5 Notification and Claim for Change of Contract Price:

- A. Any claim for a change in the Contract Price shall be made by written notice by CONTRACTOR to the CITY and to ENGINEER within five (5) calendar days of the commencement of the event giving rise to the claim and stating the general nature and cause of the claim. Thereafter, within twenty (20) calendar days of the termination of the event giving rise to the claim, written notice of the extent of the claim with supporting information and documentation shall be provided unless ENGINEER allows an additional period of time to ascertain more accurate data in support of the claim and such notice shall be accompanied by CONTRACTOR's written notarized statement that the adjustment claimed is the entire adjustment to which the CONTRACTOR has reason to believe it is entitled as a result of the occurrence of said event. All claims for changes in the Contract Price shall be in accordance with Articles 10.3 and 10.4 hereof, if CITY and CONTRACTOR cannot otherwise agree. **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.**

10.6 Notice of Change:

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 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. Failure of the CONTRACTOR to obtain such approval from the Surety may be a basis for termination of this Contract by the CITY.

10.7 Records:

The CONTRACTOR's representative and the ENGINEER shall compare records of extra work done at the end of the day. Such records shall be made in duplicate upon a form provided for such purpose by the ENGINEER and shall be signed by both the Inspector and the CONTRACTOR's representative, one copy being submitted to the ENGINEER and the other being retained by the CONTRACTOR.

10.8 Cancelled Items and Payments Therefore:

The CITY COMMISSION shall have the right to cancel those portions of the Contract relating to the construction of any item provided therein. Such cancellation shall entitle the CONTRACTOR to payment in a fair and equitable amount covering all items of cost incurred by him prior to the date of cancellation or suspension of the work. The CONTRACTOR shall be allowed a profit percentage on the materials used and on construction work actually performed, at the same rates as provided for "Extra Work", but no allowance will be made for anticipated profits. Acceptable materials ordered by the CONTRACTOR or delivered on the work, prior to date of such cancellation or suspension, may be purchased from the CONTRACTOR by the CITY at actual cost and shall thereupon, become property of the CITY, or may be returned to the manufacturer for a reasonable restocking charge.

10.9 Full Payment:

The Compensation herein provided shall be received and accepted by the CONTRACTOR as payment in full for all extra work done or costs incurred in event of cancellation.

ARTICLE 11 - CHANGES IN THE CONTRACT TIME

11.1 Change Order:

The Contract Time may only be changed by a Change Order. A FULLY EXECUTED CHANGE ORDER MUST EXIST PRIOR TO EXTENSION OR SHORTENING OF THE CONTRACT TIME.

11.2 Notification and Claim for Change of Contract Time:

- A. Any claim for a change in the Contract Time shall be made by written notice by the CONTRACTOR to the CITY and to ENGINEER within five (5) calendar days of the commencement of the event giving rise to the claim and stating the general nature and cause of the claim. Thereafter within twenty (20) calendar days of the termination of the event giving rise to the claim, written notice of the extent of the claim with supporting information and documentation shall be provided unless ENGINEER allows an additional period of time to ascertain more accurate data in support of the claim and such notice shall be accompanied by CONTRACTOR's written notarized statement that the adjustment claimed is the entire adjustment to which the CONTRACTOR has reason to believe it is entitled as a result of the occurrence of said event. All claims for changes in the Contract Time shall be determined in accordance with Articles 10.3 and 10.4 hereof, if CITY and CONTRACTOR cannot otherwise agree. **IT IS EXPRESSLY AND SPECIFICALLY AGREED THAT ANY AND ALL CLAIMS FOR CHANGES TO THE CONTRACT TIME SHALL BE WAIVED IF NOT SUBMITTED IN STRICT ACCORDANCE WITH THE REQUIREMENTS OF THIS SECTION.**
- B. The Contract Time will be extended an amount equal to time lost on critical Work items due to delays beyond the control of and through no fault or negligence of CONTRACTOR if a claim is made thereafter as provided in Article 11.2. Such delays shall include, but not be limited to, acts or neglect by any separate contractor employed by CITY, fire, floods, labor disputes, epidemics, abnormal weather conditions or acts of God

11.3 Basis for Extension:

Extensions of time shall be considered and will be based solely upon the effect of delays to the work as a whole. Extensions of time shall not be granted for delays to the work, unless the CONTRACTOR can clearly demonstrate, through schedule analysis, that the delay to the work as a whole arose in accordance with Article 12.3 or Article 15.1, and that such delays did or will, in fact, delay the progress of work as a whole. Time extensions shall not be allowed for delays to parts of the work that are not on the critical path of the project schedule. Time extensions shall not be granted until all float or contingency time, at the time of the delay, available to absorb specific delays and associated impacts is used.

11.4 Change of Time Due to Contract Execution Problems:

Refer to Article 3.4 for a decrease in Contract Time when the CONTRACTOR fails to return the correctly executed Contract Documents within the time allowed.

11.5 Change of Time Due to Change Order Evaluation:

When evaluating a proposed Change Order, the ENGINEER shall have access to any available float or contingency time. Extension will only be considered in accordance with Article 11.3.

11.6 Change of Time and Inspection and Testing:

Neither observations by the ENGINEER, nor inspections, tests or approvals by others, passing or failing, will be cause for consideration of time extension.

11.7 Change of Time and Defective Work:

- A. If WORK is found to be defective, CONTRACTOR shall bear all remedial expenses including any additional costs experienced by CITY due to delays to others performing additional WORK. CONTRACTOR shall further bear the responsibility for maintaining schedule, and will be excluded from a time extension and the recovery of delay damages due to the uncovering.
- B. If the WORK is found to be defective per the Specifications, but the CITY chooses to accept it at its sole discretion, CONTRACTOR shall bear the responsibility for maintaining schedule, and will be excluded from a time extension and the recovery of delay damages due to the uncovering.

11.8 Liquidated Damages:

All time limits stated in the Contract Documents are of the essence. The provisions of this Article 11 shall not exclude recovery for damages by CITY as indicated in Section 3 of the Supplementary General Conditions.

ARTICLE 12 - WARRANTY AND GUARANTEE;
TEST AND INSPECTIONS;
CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

12.1 Warranty and Guarantee:

The CONTRACTOR warrants and guarantees to the CITY and the ENGINEER 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.

12.2 Tests and Inspections:

- A. The CONTRACTOR shall give the ENGINEER and, when appropriate, the Building Department and other regulatory authorities which have jurisdiction over the work, timely notice of readiness of the work for all required inspections, tests or approvals.
- B. All inspections performed as a result of the issuance of the Master Building Permit shall be performed by the CITY. All costs associated with such inspections shall be paid by the CITY, EXCEPT THAT should said test or inspection fail to pass the CONTRACTOR shall pay all costs associated with the rework and the retesting.
- C. When any other regulatory authority, by virtue of its rules or regulations, requires specific tests or inspections, the CONTRACTOR shall assume full responsibility for and pay all costs in connection with said tests and inspections.
- D. The CONTRACTOR shall also be responsible for and shall pay all costs in connection with any inspection or testing required in connection with the ENGINEER's acceptance of a manufacturer, fabricator, supplier or distributor of materials or equipment proposed to be incorporated in the work, or of materials or equipment submitted for approval prior to ENGINEER's acceptance thereof for incorporation in the work and as otherwise specified in the Contract Documents.
- E. Neither observations by the ENGINEER nor inspections, tests or approvals by others shall relieve the CONTRACTOR from his obligations to perform the work in accordance with the Contract Documents.

12.3 Uncovering Work:

- A. If any work that is to be inspected, tested or approved is covered without written concurrence of the ENGINEER, it must, if requested, by the ENGINEER, be uncovered. Such uncovering and replacement shall be at the CONTRACTOR's expense.

- B. CONTRACTOR must contact all regulatory agencies issuing construction permits to make all necessary inspections. If CONTRACTOR fails to have the necessary inspections performed and such failure results in uncovering of work already performed, CONTRACTOR shall be responsible for all related time delays and monetary costs.
- C. If the ENGINEER considers it necessary or advisable that work previously covered with his permission or cognizance be observed, inspected or tested, the CONTRACTOR, at the ENGINEER's request, shall uncover, expose or otherwise make available for observation, inspection or testing as the ENGINEER 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. If, however, such work is not found to be defective the CONTRACTOR shall be allowed an increase in the Contract Price or an extension of the Contract Time, or both, directly attributable to such uncovering, exposure, observation, inspection, testing and reconstruction if he makes a claim therefor in accordance with Article 10.2 and Article 11.2.

12.4 City May Stop the Work:

If the work is defective, or the CONTRACTOR fails to supply sufficient skilled workmen or suitable materials or equipment, 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.

12.5 Correction or Removal of Defective Work:

If required by the ENGINEER, the CONTRACTOR shall promptly, without cost to the CITY and as specified by the ENGINEER either correct any defective work, whether or not fabricated, installed or completed, or if the work has been rejected by the ENGINEER, remove it from the site and replace it with nondefective work.

12.6 One Year Correction Period:

If within one year after the date of Substantial Completion or Final Completion as applicable, or such longer period of time as may be prescribed by the terms of any applicable special guarantee required by the Contract Documents or by any specific provision of the Contract Documents, any work is found to be defective, the CONTRACTOR shall promptly without cost to the CITY and in accordance with the ENGINEER's written instructions, either correct such defective work, or if it has been rejected by the ENGINEER remove it from the site and replace it with nondefective 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 ENGINEER may have the defective work corrected or the rejected work removed and replaced, and all direct and indirect costs of such removal and replacement, including compensation for additional professional services, shall be paid by the CONTRACTOR.

12.7 Acceptance of Defective Work:

If instead of requiring correction or removal and replacement of defective work, the ENGINEER prefers to accept it, he may do so. In such case, if acceptance occurs prior to the ENGINEER's recommendation of final payment, a Change Order shall be issued incorporating the necessary revisions in the Contract 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.

12.8 City May Correct Defective Work:

If the CONTRACTOR fails within a reasonable time after written notice of the ENGINEER to proceed to correct and to correct defective work or to remove and replace rejected work as required by the ENGINEER in accordance with Paragraph 12.5, or if the CONTRACTOR fails to perform the work in accordance with the Contract Documents, (including any requirements of the progress schedule), the CITY may, after seven 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, and suspend the CONTRACTOR's services related thereto, take possession of the CONTRACTOR's tools, appliances, construction equipment and machinery at the site and 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. The CONTRACTOR shall allow the CITY, the CITY's representatives, agents and employees such access to the site as may be necessary to enable the CITY to exercise his 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 ENGINEER, 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 limitations, compensation for additional professional services required and all 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 rights hereunder.

ARTICLE 13 - PAYMENTS TO THE CONTRACTOR

13.1 Basis of Payment:

Progress payments shall be based on the aggregate of the unit price amounts listed in the Proposal or in the Schedule of Values which have been incorporated in the work acceptable to the ENGINEER.

13.2 Unit Price Inclusion:

The unit prices stated in the Proposal include all costs and expenses for materials, labor, tools, equipment, transportation, commissions, patent fees and royalties, removing crossings or other obstructions, protection or maintaining pipes, drains, railroad tracks, buildings, bridges, or other structures furnishing temporary crossings or bridges, furnishing all supplemental construction stakes, batter boards, templates, common and ordinary labor for handling materials during inspection replacing any property damage, together with any and all costs or expenses for performing and completing the work as specified.

13.3 Schedule of Values: (Lump Sum Price Breakdown)

A Schedule of Values must be submitted within seven days subsequent to the CONTRACTOR executing and submitting the Documents required of Article 2.13 of the Section II – Special Terms and Conditions. The schedules shall be satisfactory in form and substance to the ENGINEER, and shall include quantity and unit prices aggregating the Contract Price, and shall subdivide the work into component parts in sufficient detail to serve as the basis for progress payments during construction. Upon acceptance of the schedule of values by the ENGINEER, it shall be incorporated into a form of Application for Payment acceptable to the ENGINEER.

13.4 Changed Conditions: (Unit Price Only)

It is mutually agreed that due to latent field conditions which can not be foreseen at the time of advertising for bids, adjustments of the Plans to field conditions will be necessary during construction; and, therefore, such changes in the plans shall be recognized as constituting a normal and accepted margin of adjustment not unusual and not involving or permitting any change or modification of unit prices, in which case payment will be made for the revised quantities at the unit price bid in the Proposal.

13.5 Application for Progress Payment:

On the 20th day of the month or the first working day thereafter, the CONTRACTOR shall submit to the ENGINEER for review an Application for Payment form filled out and signed by the CONTRACTOR. The form shall be notarized, and shall cover the work completed as of the date of the application. The Application for Payment shall be accompanied by a Schedule of Values, and any other supporting documentation as the ENGINEER may reasonably require.

13.6 Payment for Materials:

If payment is requested on the basis of materials and equipment not incorporated in the work but delivered and suitably stored at the site or at another location agreed to in writing, the Application for Payment shall also be accompanied by such data, satisfactory to the ENGINEER, as will establish the CITY's title to the material and equipment and protect the CITY's interest therein, including applicable insurance.

13.7 Affidavit Required:

All Applications for Payment shall include an Affidavit of the CONTRACTOR stating that all previous progress payments received on account of the work have been applied to discharge in full all of CONTRACTOR's obligations reflected in prior Applications for Payment. The amount of retainage with respect to progress payments will be 5%.

13.8 Retainage:

The amount of retainage with respect to progress payments will be 5% until completion of the construction services purchased pursuant to the Contract.

13.9 CONTRACTOR's Warranty of Title:

The CONTRACTOR warrants and guarantees that title to all work, materials and equipment covered by any Application for Payment whether incorporated in the Project or not, will pass to the CITY at the time of payment free and clear of all liens, claims, security interests and encumbrances (hereinafter in these General Conditions referred to as "Liens").

13.10 Review of Application for Payment:

The ENGINEER will, within seven (7) days, review the Application for Payment and either approve and submit it for payment or notify the CONTRACTOR of the deficiencies such that the CONTRACTOR may make the necessary corrections and resubmit in time for the month's payment. However, the ENGINEER may refuse to recommend the whole or any part of any payment if, in his opinion, it would be incorrect to make such representations. He may also refuse to recommend any such payment, or because of subsequently discovered evidence or the results of subsequent inspections or tests, nullify any such payment previously recommended to such extent as may be necessary in the ENGINEER's opinion to protect the CITY from loss because:

- A. The work is defective, or completed work has been damaged requiring correction or replacement.
- B. Written claims have been made against the CITY or Liens have been filed in connection with the work.
- C. The Contract Price has been reduced because of Change Order.
- D. The CITY has been required to correct defective work or complete the work in accordance with Article 12.8.
- E. The CONTRACTOR's unsatisfactory prosecution of the work in accordance with the Contract Documents.
- F. The CONTRACTOR's failure to make payment to Sub- Contractors, or for labor, materials or equipment.

13.11 Payment to the Contractor:

Payments are made only on the fifteenth day or first workday thereafter of each month.

ARTICLE 14 - SUBSTANTIAL COMPLETION, PARTIAL UTILIZATION,
FINAL CLEAN UP, INSPECTION, PAYMENT AND ACCEPTANCE

14.1 Substantial Completion:

When the CONTRACTOR considers the entire work ready for its intended use, the CONTRACTOR shall, in writing to the ENGINEER, certify that the entire work is substantially complete and request that the ENGINEER issue a Certificate of Substantial Completion. Within a reasonable time thereafter the CONTRACTOR and the ENGINEER shall make an inspection of the work to determine the status of completion. If the ENGINEER does not consider the work substantially complete, the ENGINEER will notify the CONTRACTOR in writing giving his reasons therefor. If the ENGINEER considers the work substantially complete, the ENGINEER will prepare and deliver to the CONTRACTOR a Certificate of Substantial Completion, which shall fix the date of Substantial Completion. There shall be attached to the certificate a proposed Punch List, developed by the CONTRACTOR, of items to be completed or corrected before final payment.

Within ten (10) days after delivery of the certificate, the CITY shall review the proposed Punch List and either approve it or contact the CONTRACTOR to commence good faith efforts to develop a Punch List that is satisfactory to both parties. If the parties are unable to resolve any differences they may have in the development of the Punch List, the ENGINEER shall resolve their differences. The parties shall expedite the process of developing the Punch List with the intent of finalizing the Punch List within sixty (60) days after the date of Substantial Completion.

At the time of delivery of the Certificate of Substantial Completion the ENGINEER will deliver to the CONTRACTOR written notice as to division of responsibilities pending final payment between the CITY and the CONTRACTOR with respect to security, operation, safety, maintenance, heat, utilities and insurance, said responsibilities will be binding on the CITY and the CONTRACTOR until final payment. Unless otherwise stated herein or on the Certificate of Substantial Completion, all building, product, equipment, and machinery warranties will commence on the date of Substantial Completion. The CITY shall have the right to exclude the CONTRACTOR from the work after the date of Substantial Completion, but the CITY shall allow the CONTRACTOR reasonable access to complete or correct items on the Punch List.

14.2 Partial Utilization:

Use by the CITY of any finished part of the work which has specifically been identified in the Contract Documents or which the ENGINEER and the CONTRACTOR agree constitutes a separately functioning and usable part of the work that can be used by the CITY without significant interference with CONTRACTOR's performance of the remainder of the work, may be accomplished prior to Substantial Completion of all the work subject to the following:

- A. The ENGINEER at any time may request the CONTRACTOR in writing to permit the CITY to use any such part of the work which the ENGINEER believes to be ready for its intended use and substantially complete. If the CONTRACTOR agrees, the CONTRACTOR will certify to the ENGINEER that said part of the work is substantially complete and request the ENGINEER to issue a Certificate of Substantial Completion for that part of the work. The CONTRACTOR, at any time, may notify the ENGINEER in writing that the CONTRACTOR considers any such part of the work ready for its intended use and substantially complete and request the ENGINEER to issue a Certificate of Substantial Complete for the part of the work. Within a reasonable time after either such request, the CONTRACTOR and the ENGINEER shall make an inspection of that part of the work to determine its status of completion. If the ENGINEER does not consider that part of the work to be substantially complete, the ENGINEER will notify the CONTRACTOR in writing giving the reasons therefore. If the ENGINEER considers that part of the work to be substantially complete, the provisions of Article 14.1 will apply with respect to Certificate of Substantial Completion of that part of the work and the division of responsibility in respect thereof and access thereto. It shall be understood by the CONTRACTOR that until such written notification is issued, all responsibility for care and maintenance of all of the WORK shall be borne by the CONTRACTOR. Upon issuance of said written notice of partial utilization, the OWNER will accept responsibility for the protection and maintenance of all such items or portions of the WORK described in the written notice.

14.3 Final Clean-Up:

Upon completion of the work and before final inspection shall be made, the CONTRACTOR shall clean and remove from the site, the Right-of-Way and adjacent property, all surplus and discarded materials, rubbish, and temporary structures; restore in an acceptable manner all property, both public and private, which has been damaged during the prosecution of the work; and shall leave the site and vicinity unobstructed in a neat and presentable condition throughout the entire area or length of the work under Contract. The placing of materials of every character, rubbish, or equipment on the abutting property, with or without the consent of the property owners, shall not constitute the satisfactory disposal. If the work is of such a character as may be done by block or sections, the CONTRACTOR may be required to promptly remove and dispose of accumulated rubbish, debris or surplus materials from blocks or sections as completed or partially completed. No separate payment will be made for final cleaning up and restoration of property, but all costs thereof shall be included in the prices bid for the various scheduled items of work.

14.4 Final Inspection:

Upon written notice from the CONTRACTOR that the entire work or an agreed portion thereof is complete and final clean-up has been completed, the ENGINEER will make a final inspection with the CONTRACTOR and will notify the CONTRACTOR in writing of all particulars in which this inspection reveals that the work is incomplete or defective. The CONTRACTOR shall immediately take such measures as are necessary to remedy such deficiencies.

14.5 Final Application for Payment:

After the CONTRACTOR has completed all such corrections to the satisfaction of the ENGINEER and delivered all maintenance and operating instructions, schedules, guarantees, Bonds, certificates of inspection, marked-up record documents (as provided in Article 7.19 of the General Conditions and other documents; all as required by the Contract Documents and after the ENGINEER has indicated that the work is acceptable (subject to the provisions of Article 14.9) the CONTRACTOR may make Application for Final Payment following the procedure for progress payments. The final Application for Payment shall be accompanied by all documentation called for in the Contract Documents, together with complete and legally effective releases or waivers (satisfactory to the CITY) of all Liens arising out of or filed in connection with the work. In lieu thereof and as approved by the CITY, the CONTRACTOR may furnish receipts or releases in full; an affidavit of the CONTRACTOR that the releases and receipts include all labor, services, material and equipment for which a Lien could be filed, and that all payrolls, material and equipment bills, and other indebtedness connected with the work for which the CITY or the CITY's property might in any way be responsible, have been paid or otherwise satisfied; and consent of the Surety, if any, to final payment. If any Subcontractor or Supplier fails to furnish a release or receipt in full, the CONTRACTOR may furnish a Bond or other collateral satisfactory to the CITY to indemnify the CITY against any Lien.

14.6 Final Payment and Acceptance:

If on the basis of the ENGINEER's observation of the work during construction and final inspection, and the ENGINEER's review of the final Application for Payment and accompanying documentation, all as required by the Contract Documents, the ENGINEER is satisfied that the work has been completed and the CONTRACTOR's other obligations under the Contract Documents have been fulfilled, the ENGINEER will recommend payment. Thereupon the ENGINEER will give written notice to the CITY and the CONTRACTOR that the work is acceptable subject to the provisions of Article 14.9.

14.7 Payment of Retainage Without Final Completion:

If through no fault of the CONTRACTOR, final completion of the work is significantly delayed and if the ENGINEER so confirms, the CITY shall, upon receipt of the CONTRACTOR's final Application for Payment and recommendation of the ENGINEER, and without terminating the Agreement, make payment of the balance due for the portion of the work fully completed and accepted. If the remaining balance to be held by the CITY for work not fully completed or corrected is less than the retainage stipulated in the Agreement and if Bonds have been furnished as required in Article 5.2, the written consent of the Surety to the payment of the balance due for that portion of the work fully completed and accepted shall be submitted by the CONTRACTOR to the ENGINEER with the application for such payment. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of claims.

14.8 CONTRACTOR's Continuing Obligation:

The CONTRACTOR's obligation to perform and complete the work in accordance with the Contract Documents shall be absolute. Neither recommendation of any progress or final payment by the ENGINEER, nor the issuance of a Certificate of Substantial Completion, nor any payment by the CITY to the CONTRACTOR under the Contract Documents, nor any use or occupancy of the work or any part thereof by the CITY nor any act of acceptance by the CITY nor any failure to do so, nor any review and approval of a Shop Drawing or sample submission, nor the issuance of a notice of acceptability by the ENGINEER pursuant to Article 14.6, nor any correction of defective work by the CITY will constitute an acceptance of work not in accordance with the Contract Documents or a release of the CONTRACTOR's obligation to perform the work in accordance with the Contract Documents (except as provided in Article 14.9).

14.9 Waiver of Claims:

The making and acceptance of final payment will constitute:

- A. A waiver of all claims by the CITY against the CONTRACTOR, except claims arising from unsettled Liens, from defective work appearing after final inspection pursuant to Article 14.4 or from failure to comply with the Contract Documents or the terms of any special guarantees specified therein; however, it will not constitute a waiver by the CITY of any rights in respect of the CONTRACTOR's continuing obligations under the Contract Documents.
- B. A waiver of all claims by the CONTRACTOR against the CITY other than those previously made in writing and still unsettled.

ARTICLE 15 - SUSPENSION OF WORK AND TERMINATION

15.1 City May Suspend Work:

The CITY may, at any time and without cause, suspend the work or any portion thereof for a period of not more than ninety (90) days by notice in writing to the CONTRACTOR which will fix the date on which work will be resumed. The CONTRACTOR shall resume the work on the date so fixed. The CONTRACTOR shall be allowed an increase in the Contract Price or an extension of the Contract Time, or both, directly attributable to any suspension.

15.2 City May Terminate:

- A. Upon the occurrence of any one or more of the following events:
1. If the CONTRACTOR commences a voluntary case under any chapter of the Bankruptcy Code (Title 11, United States Code), as now or hereafter in effect, or if the CONTRACTOR takes any equivalent or similar action by filing a petition or otherwise under any other federal or state law in effect at such time relating to the bankruptcy or insolvency.
 2. If a petition is filed against the CONTRACTOR under any chapter of the Bankruptcy Code as now or hereafter in effect at the time of filing, or if a petition is filed seeking any such equivalent or similar relief against the CONTRACTOR under any other federal or state law in effect at the time relating to bankruptcy or insolvency.
 3. If the CONTRACTOR makes a general assignment for the benefit of creditors.
 4. If a trustee, receiver, custodian or agent of the CONTRACTOR is appointed under applicable law or under contract, whose appointment or authority to take charge of property of the CONTRACTOR is for the purpose of enforcing a Lien against such property or for the purpose of general administration of such property for the benefit of the CONTRACTOR's creditors.
 5. If the CONTRACTOR admits in writing an inability to pay its debts generally as they become due.
 6. If the CONTRACTOR persistently fails to perform the work in accordance with the Contract Documents (including, but not limited to, failure to supply a qualified superintendent or sufficient skilled workers or suitable materials or equipment or failure to adhere to the approved progress schedule revised from time to time).
 7. If the CONTRACTOR disregards laws or regulations of any public body having jurisdiction.

8. If the CONTRACTOR disregards the authority of the ENGINEER.
 9. If the CONTRACTOR otherwise violates in any substantial way any provisions of the Contract Documents.
- B. The CITY may, after giving the CONTRACTOR and the Surety seven days' written notice and to the extent permitted by laws and regulations, terminate the services of the CONTRACTOR, exclude the CONTRACTOR from the site and take possession of the work and of all the CONTRACTOR's tools, appliances, construction equipment and machinery at the site and use the same to the full extent they could be used by the CONTRACTOR (without liability to the CONTRACTOR 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 such case the CONTRACTOR shall not be entitled to receive any further payment until the work is finished. If the unpaid balance of the Contract Price exceeds the direct, indirect and consequential costs of completing the work (including but not limited to fees and charges of engineers, architects, attorneys and other professionals, and court and arbitration costs) such excess will be paid to the CONTRACTOR. If such costs exceed such unpaid balance, the CONTRACTOR, or CONTRACTOR's Surety, shall pay the difference to the CITY.
 - C. Where the CONTRACTOR's services have been so terminated by the CITY, the CITY alone shall determine the scope and description of the work to be completed and the method and schedule for completing it.
 - D. Where the CONTRACTOR's services have been so terminated by the CITY the termination will not affect any rights or remedies 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.
 - E. Upon seven days' written notice to the CONTRACTOR the CITY may, without cause and without prejudice to any other right or remedy, elect to abandon the work and terminate the Contract. In such case the CONTRACTOR shall be paid for all work executed and any expense sustained plus reasonable termination expenses, which will include, but not be limited to, direct, indirect and consequential costs (including, but not limited to, fees and charges of engineers, architects, attorneys and other professionals and court and arbitration costs).

15.3 Contractor May Stop Work or Terminate:

If through no act or fault of the CONTRACTOR, the work is suspended for a period of more than ninety (90) days by the CITY or under an order of court or other public authority, or the CITY fails for sixty (60) days to pay the CONTRACTOR any sum finally determined to be due, then the CONTRACTOR may, upon seven days' written notice to the CITY terminate the Contract and recover from the CITY payment for all work executed and any expense sustained plus reasonable termination expenses. In addition and in lieu of terminating the Contract, if the CITY has failed to make any payment as aforesaid, the CONTRACTOR may upon seven days' written notice to the CITY stop the work until payment of all amounts then due are paid. The provisions of this paragraph shall not relieve the CONTRACTOR of the obligations to carry on the work in accordance with the progress schedule and without delay during disputes and disagreements with the CITY.

- END OF SECTION -

ATTACHMENT C
SUPPLEMENTARY GENERAL CONDITIONS
INDEX TO ARTICLES

1. Project Schedule	00800-2
2. Insurance Requirements (Not Used)	00800-3
3. Liquidated Damages	00800-4
4. Restricted Area	00800-5
5. Existing Facilities and Structures	00800-5
6. Explosives	00800-5
7. Contract Documents	00800-5
8. Required Notifications	00800-5
9. Notice of Completion	00800-5
10. Prevailing Wage Requirement	00800-5
11. Inspections and Testing During Overtime	00800-6
12. Retainage	00800-6
13. Owner's Contingency (Not Used)	00800-8

General Note:

The General Conditions refer to specific section numbers in the Supplementary General Conditions. These reference numbers may not coordinate with the actual Article numbers utilized in the Supplementary General Conditions. The CONTRACTOR shall comply with all General Conditions and all Supplementary General Conditions as well as related conditions included in the General Requirements, Division 1 of the Technical Specifications. Incorrect cross-reference numbers shall not relieve this requirement.

1. Project Schedule

Time is of the essence for this work. The following defines the schedule for the project:

**CONSTRUCTION WORK SCHEDULE
CONSTRUCTION / STARTUP / ACCEPTANCE:**

Major Milestones	Completion Time (Calendar Days)	Liquidated Damages (Per Day)
Substantial Completion	270	\$500
Project Closeout	300	\$500

Failure to meet any of the above defined construction/startup/acceptance completion dates shall subject the CONTRACTOR to pay damages as specified in these Supplementary General Conditions in Article 3.

⁽¹⁾Substantial Completion

1. Refer to Attachment B - General Conditions Articles 14.1 and 14.2. (Certification of Substantial Completion Services appended to the Supplementary General Conditions).
2. Substantial Completion shall also include:
 - Completion of all construction work associated with the specific “Major Milestone” listed in the construction work schedule including completion of punch list items. “Completion of punch list items” shall be as determined by the Engineer in the field.
 - Coating touchup completed.
 - Record shop drawings and O&M submittals received and accepted by the Engineer.
 - Record drawing red-lines received and accepted by the Engineer.
 - Guarantee certifications, performance affidavits, and all other certifications received and accepted by the Engineer.

Contractor shall also conform to construction sequence constraints as defined on the Drawings and in Specifications.

⁽²⁾Project Closeout

1. Refer to Division 1 General Requirement, Section 01700 Project Closeout.
2. Project Closeout shall also include:
 - All requirements of substantial completion met plus the following
 - Site cleanup and restoration completed
 - All other sitework completed
 - Minor punch list items completed (minor as defined by the Engineer in the field)
 - Demobilization completed
 - Releases from all parties who are entitled to claims

The title "Engineer" utilized in these descriptions for substantial and final completion shall mean the City staff engineer assigned to this project, or his designated representative.

2. **Insurance Requirements (Not Used. Refer to ARTICLE 2.25 of SECTION II – SPECIAL TERMS AND CONDITIONS OF THE CONTRACT DOCUMENTS**

3. Liquidated Damages

Liquidated damages shall be paid by the CONTRACTOR to the CITY for failure to complete work on time in accordance with the following schedule:

CONSTRUCTION/STARTUP/ACCEPTANCE:		
<u>Major Milestones</u>	<u>Completion Time (calendar days)</u>	<u>Liquidated Damages (Per Day)</u>
1. Substantial Completion	270	\$500
2. Project Closeout	300	\$500

The CITY is hereby authorized to deduct the sums described above from the monies which may be due to the CONTRACTOR for the work under this contract. Liquidated damages shall be additive such that the maximum total which may be deducted shall be. Other damages for failure to meet warranty conditions as defined in other sections of the Specifications shall also be added with liquidated damages for failure to meet completion times.

4. **Restricted Area**

The CONTRACTOR shall, in installing the new facilities, confine all activities within the CITY property, easement, and right-of-ways indicated.

5. **Existing Facilities and Structures**

All existing facilities shall be protected, and if damaged, shall be repaired by the CONTRACTOR at no additional cost to the CITY.

6. **Explosives**

Explosives shall not be used on this project.

7. **Contract Documents**

The CITY will provide the CONTRACTOR with one (1) set of Contract Documents after the Notice to Proceed.

8. **Required Notifications**

When provisions of the pertinent codes, standards or regulations conflict with this Specification, the more stringent shall apply.

Prior to any site work, the CONTRACTOR shall notify the Engineering and Construction Services Division Inspector at (954) 921-3930.

Prior to excavation at the site, the CONTRACTOR shall notify the appropriate utilities and Sunshine State One-Call of Florida, Inc. (formerly U.N.C.L.E.) at 1-800-432-4770 for locations of buried utilities.

Prior to closure of any CITY streets or alleyways, or other activity which requires the diversion of traffic, the CONTRACTOR shall notify and obtain the permission of the CITY of Hollywood Fire and Police Communications Section at (954) 967-4321.

9. **Notice of Completion**

See attached form.

10. **Prevailing Wage Requirement**

A. The CONTRACTOR shall be responsible for ensuring payment of the rate of wages and fringe benefits, or cash equivalent, for all laborers, mechanics and apprentices employed by him/her or his/her SUBCONTRACTORS on the work covered by this contract which shall be not less than the prevailing rate of wages and fringe benefits payment or cash equivalent for similar skills or classifications of work as established by the General Wage Decision by the United States Department of Labor for Broward County, Florida that is in effect prior to the date the CITY issued the invitation for bids for this project (the prevailing rate of wages and fringes can be obtained at website <http://www.access.gpo.gov/davisbacon>).

If the General Wage Decision fails to provide for a fringe benefit rate for any worker classification, then the fringe benefit rate applicable to such worker classification shall be the fringe benefit rate that has a basic wage rate closest in dollar amount to the work classification for which no fringe benefit rate has been provided.

- B. Upon commencement of work, the CONTRACTOR and all of his/her SUB-CONTRACTORS shall post a notice in a prominent place at the work site stating the requirements of this Article.
- C. As per the City of Hollywood Code of Ordinances, Prevailing Wage Requirements and Fringe Benefits are applicable to the following: (A) Utilities projects over \$1,000,000.00 (one million dollars) and (B) All other projects over \$500,000.00 (five hundred thousand dollars).

11. Inspections and Testing During Overtime

- A. The following supplement Article 3.15 and 3.16 of the General Conditions:

For weekend work, CONTRACTOR shall submit a written request to the CITY by the preceding Wednesday. A separate request is required for each week that the CONTRACTOR wished to work on a weekend. For evening and holiday work, CONTRACTOR shall submit a written request to the CITY three (3) days in advance. The CITY will provide inspection services for all overtime work and the CONTRACTOR shall pay for inspection services per Article 3.15, no exceptions.

Similarly, Holiday and other overtime work shall be requested a minimum of 36-hours in advance and CITY will provide inspection for all overtime.

- B. Exceptions to the hours and days of the week for work and other related limitations are allowed only for tie-ins during low flow periods / early morning hours, coatings that need to be applied during lower temperature times of the day and whenever the Documents specifically define that work shall be completed outside of the limitations for "normal" work hours, days, etc.

Inspection for tie-ins during low flow/early morning and specialty coating application performed during nighttime will not be cause for extra inspection costs unless such work is remedial in nature as a result of defective work.

12. Retainage

After 50-percent completion of the construction services purchased pursuant to this contract, CONTRACTOR may present to CITY a payment request for one-half of the retainage then held by CITY. CITY shall promptly make payment to CONTRACTOR, unless CITY has grounds for withholding the payment of retainage. CITY shall have grounds for withholding the payment of retainage with respect to any amounts that are the subject of a good-faith dispute, the subject of a claim brought pursuant to Florida Statute Section 255.05, or otherwise the subject of a claim or demand by CITY or CONTRACTOR.

At acceptance of Substantial Completion, CITY shall promptly make payment to CONTRACTOR of one-half of the retainage then held by CITY. At acceptance of completion of all punch list items, CITY shall promptly make payment to CONTRACTOR the balance of retainage then held by CITY.

13. Owner's Contingency (NOT USED)

This allowance is in its entirety dedicated for the use of the Owner (The City of Hollywood) to address conditions (or work) associated with undefined conditions. All work resulting from undefined conditions shall be authorized in writing and in advance by the Owner, specifically the Director of Public Services, through the full execution of a Field Order. The actual amount to be paid per Field Order will be negotiated and agreed by both parties (the Owner and the Contractor). The final/negotiated amount of the field order will be deducted from the Owner's Allowance designated in the Bid Proposal and Schedule of Values. The Owner reserves the right to award none, any portion of, or all of the money associated with this allowance. By executing the CONTRACT between the City of Hollywood and the Contractor, the Contractor acknowledges that under no circumstances he or she should assume that he or she would be entitled to any amounts set aside by the City of Hollywood within the Owner's Allowance.

CERTIFICATE OF SUBSTANTIAL COMPLETION

PROJECT: **ENGINEER:** Engineering & Const. Services Division

TO: **CONTRACTOR:**

CONTRACT FOR:

NOTICE TO PROCEED DATE:

DATE OF ISSUANCE:

PROJECT OR DESIGNATED PORTION SHALL INCLUDE:

Portions of the work performed under this Contract as described above, have been reviewed and found to be substantially complete. The Date of Substantial Completion of Project or designated portion thereof designated above is hereby established as _____ which is also the date of commencement of applicable warranties required by the Contract Documents for the noted area.

DEFINITION OF DATE OF SUBSTANTIAL COMPLETION

The Date of Substantial Completion of the work or designated portion thereof is the date certified by the ENGINEER ("Date of Issuance" above) when construction is sufficiently complete, in accordance with the Contract Documents, so the CITY can occupy or utilize the work or designated portion thereof for the use for which it is intended, as expressed in the Contract Documents.

A list of items to be completed or corrected, prepared by the CONTRACTOR and verified and amended by the ENGINEER, for the above referenced "Project or Designated Portion" is attached to this form (attached "Punch List" dated _____).

The failure to include any items on such list does not alter the responsibility of the CONTRACTOR to complete all work in accordance with the Contract Documents.

CERTIFICATE OF SUBSTANTIAL COMPLETION

Please note that in accordance with Article 14 General Conditions, the Contractor retains full responsibility for the satisfactory completion of all work regardless of whether the Owner occupies and / or operates a part of the facility and that the taking possession and use of such work shall not be deemed an acceptance of any work not completed in accordance with the Contract Documents.

City of Hollywood - ESSD

ENGINEER

BY

DATE

CONTRACTOR

BY

DATE

The CITY OF HOLLYWOOD, through the City's authorized representative, accepts the work or designated portion thereof as substantially complete and will assume full possession thereof at _____(time) on _____
_____ (date).

BY

DATE

- END OF SECTION -

ADDENDUM NUMBER 1



CITY OF HOLLYWOOD FLORIDA

CONTRACT DOCUMENTS

SOUTHERN REGIONAL WASTEWATER COLLECTION SYSTEM

McKINLEY STREET INTERCEPTOR VENTILATION AND TYLER STREET CONFLICT BOX REVISION

CITY PROJECT NO. 7111

BID DOCUMENTS
VOLUME 1 OF 2

March 2023

Hazen

Hazen and Sawyer
4000 Hollywood Boulevard, Suite 750N
Hollywood, FL 33021
Certificate of Authorization Number: 2771

Engineers Project No. 4321-016

TABLE OF CONTENTS
CITY OF HOLLYWOOD
SOUTHERN REGIONAL WASTEWATER COLLECTION SYSTEM
McKINLEY STREET INTERCEPTOR VENTILATION AND
TYLER STREET CONFLICT BOX REVISION

VOLUME 1 OF 2

<u>SECTION</u>	<u>TITLE</u>
00030	NOTICE TO BIDDERS
00100	INSTRUCTIONS TO BIDDERS
00200	CONE OF SILENCE
00300	PROPOSAL
00301	PROPOSAL BID FORM
00410	APPROVED BID BOND
00420	INFORMATION REQUIRED FROM BIDDERS
00435	LOCAL PREFERENCE (EXHIBIT "A")
00495	TRENCH SAFETY FORM
00500	CONTRACT
00610	PERFORMANCE BOND
00620	PAYMENT BOND
00700	GENERAL CONDITIONS
00800	SUPPLEMENTARY GENERAL CONDITIONS

DIVISION 1 – GENERAL REQUIREMENTS

01010	SUMMARY OF WORK
01025	BASIS OF PAYMENT

01070	ABBREVIATIONS
01090	REFERENCE STANDARDS
01200	PROJECT MEETINGS
01300	SUBMITTALS
01400	TESTING AND INSPECTION
01500	CONSTRUCTION CONSIDERATIONS
01510	TEMPORARY UTILITIES
01520	MAINTENANCE OF FACILITIES AND SEQUENCE OF CONSTRUCTION
01530	PROTECTION OF EXISTING FACILITIES
01550	SITE ACCESS AND STORAGE
01560	TEMPORARY ENVIRONMENTAL CONTROLS
01570	TRAFFIC REGULATIONS AND MAINTENANCE OF TRAFFIC
01590	FIELD OFFICE, EQUIPMENT AND SERVICES
01600	EQUIPMENT AND MATERIALS
01650	EQUIPMENT TESTING AND STARTUP
01700	PROJECT CLOSEOUT

DIVISION 2 – SITEWORK

02050	DEMOLITION
02210	SITE GRADING
02222	EXCAVATION AND BACKFILL FOR UTILITIES
02500	SURFACE RESTORATION
02510	ASPHALTIC CONCRETE PAVEMENT
02526	CONCRETE PAVEMENT, CURBS AND SIDEWALKS
02580	PAVEMENT MARKING AND TRAFFIC SIGNS
02754	CONCRETE SANITARY SEWER MANHOLES
02934	SODDING

DIVISION 3 – CONCRETE

03100	CONCRETE FORMWORK
03200	CONCRETE REINFORCEMENT
03300	CAST-IN-PLACE CONCRETE
03315	GROUT
03350	CONCRETE FINISHES

DIVISION 4 – MASONRY (NOT USED)

DIVISION 5 – METALS

05010	METAL MATERIALS
05050	METAL FASTENING
05120	STRUCTURAL STEEL
05500	METAL FABRICATIONS
05530	CASTINGS

DIVISION 6 – WOOD AND PLASTICS (NOT USED)

DIVISION 7 – THERMAL AND MOISTURE PROTECTION (NOT USED)

DIVISION 8 – DOORS AND WINDOWS (NOT USED)

DIVISION 9 – FINISHES (NOT USED)

DIVISION 10 – SPECIALTIES (NOT USED)

DIVISION 11 – EQUIPMENT (NOT USED)

DIVISION 12 – FURNISHINGS (NOT USED)

DIVISION 13 – SPECIAL CONSTRUCTION (NOT USED)

DIVISION 14 – CONVEYING SYSTEMS (NOT USED)

DIVISION 15 – MECHANICAL CONSTRUCTION

15000	BASIC MECHANICAL REQUIREMENTS
15008	SMALL PVC NON-PRESSURE PIPE
15020	PIPE SUPPORTS
15095	VALVES, GENERAL
15100	VALVE OPERATORS AND ELECTRIC VALVE ACTUATORS
15108	GATE VALVES
15114	MISCELLANEOUS VALVES AND APPURTENANCES

DIVISION 16 (NOT USED)

DIVISION 17 (NOT USED)

VOLUME 2 OF 2

DRAWINGS

TECHNICAL SPECIFICATIONS

DIVISION 1 – GENERAL REQUIREMENTS

SECTION 01010 - SUMMARY OF WORK

PART 1 -- GENERAL

1.01 THE REQUIREMENT

- A. The work to be performed under this Contract shall consist of furnishing all tools, equipment, materials, supplies, and manufactured articles and for furnishing all transportation and services, including fuel, power, water, and essential communications, and for the performance of all labor, work, or other operations required for the fulfillment of the Contract in strict accordance with the Contract Documents. The work shall be complete, and all work, materials, and services not expressly shown or called for in the Contract documents which may be necessary for the complete and proper construction of the work in good faith shall be performed, furnished, and installed by the CONTRACTOR as though originally so specified or shown, at no increase in cost to the CITY.
- B. Prior to construction, the CONTRACTOR shall verify existing utilities identified on the Drawings and locate other potential utilities in their working area that may not be shown on the Drawings. The utility verifications consist of excavation to verify tie-in points and to locate potential conflicts that may affect the work as shown on the Drawings. The CONTRACTOR shall be responsible for the coordination of this work with the associated utility owners and permitting agencies having jurisdiction over the specific locations to be verified.

1.02 SCOPE

- A. The work to be performed includes site, civil, sitework, mechanical, structural, and all related work associated with the following:
 - McKinley Street Ventilation Manhole Nos. 6 and 10: This work consists of surveying, saw cutting asphalt and concrete, excavation, core drilling, forming and pouring concrete, vent pipe and valve installation, vent pole installation, and backfilling and restoration of affected roadway, driveway, sidewalk and grassy areas. In addition, this work includes all construction sequencing requirements.
 - Tyler Street Conflict Box: The work consists of removal and replacing existing manhole rings and covers, installation of interconnecting vent pipes inside conflict box, installation of conflict box vent, and restoration of road and roundabout, including brick, curb, and vegetation.
- B. It is the intent of the CITY to obtain a complete and working installation under this contract and any items of labor, materials or equipment, which may reasonably be assumed as necessary to accomplish this end, should be supplied whether or not specifically shown on the plans or described herein. Maintenance of existing operations is mandated throughout the construction period.

1.03 WORK BY OTHERS

- A. The CONTRACTOR shall cooperate fully with all utility forces of the CITY, or other public or private agencies engaged in the relocation, altering, or otherwise rearranging of any facilities which interfere with the progress of the work, and shall schedule the work so as to minimize interference with said relocation, altering, or rearranging of facilities.
- B. The CONTRACTOR's attention is directed to the fact that work will be conducted at the site by other contractors during the performance of the work under this Contract. The CONTRACTOR shall conduct its operations so as to cause a minimum of interference with the Work of such other contractors, and shall cooperate fully with such contractors to provide continued safe access to their respective portions of the site, as required to perform their respective contracts.
- C. When two or more contracts are being executed at one time on the same or adjacent land in such manner that Work on one contract may interfere with that on another, the CITY shall determine the sequence and order of the Work. When the territory of one contract is the necessary or convenient means of access for the execution of another contractor, such privilege of access or any other reasonable privilege may be granted by the CITY to CONTRACTOR.

1.04 LOCATION OF THE PROJECT

- A. The project is approximately located at 2338 McKinley Street, 1855 McKinley Street, and 13th Avenue and Tyler Street in Hollywood, Florida.

1.05 CONTRACT DRAWINGS

- A. The work to be performed is shown on the set of Contract Drawings entitled "City of Hollywood Southern Regional Wastewater Collection System, McKinley Street Interceptor Ventilation & Tyler Street Conflict Box Revision".

1.06 CONTRACTOR FURNISHED MATERIAL AND EQUIPMENT

- A. All equipment, materials, or devices incorporated in this project shall be new and unused, unless indicated otherwise in the Contract Documents and shall be the products of reliable manufacturers who, unless otherwise specified, have been regularly engaged in the manufacture of such material and equipment for at least five (5) years. Procedures and additional requirements regarding manufacturer's experience and substitutions are included in Section 01300 - Submittals.

1.07 DRAWINGS OF EXISTING FACILITIES

- A. Drawings of the existing facilities may be inspected at the City Engineering Support Services Office. These drawings are for information only and are not a part of the Contract Documents. In making these drawings available for inspection, the CITY makes no guarantee, either expressed or implied, as to their accuracy or completeness.

1.08 ITEMS SPECIFIED ON DRAWINGS

- A. Certain items of material and/or equipment, and their installation may be specified on the Drawings and not mentioned in the Specifications. Such items are to be considered

as both shown on the Drawings and noted in the Specifications and be provided by the CONTRACTOR in accordance with the Specification on the Drawings.

1.09 FIELD LAYOUT OF WORK

- A. All work under this Contract shall be constructed in accordance with the lines and grades shown on the Contract Drawings or as directed by the ENGINEER. Elevations of existing ground, structures and appurtenances are believed to be reasonably correct but are not guaranteed to be absolute and therefore are presented only as an approximation. Any error or apparent discrepancy in the data shown or omissions of data required for accurately accomplishing the stake-out survey shall be referred immediately to the ENGINEER for interpretation or correction.
- B. All survey work for construction control purposes shall be made by the CONTRACTOR at his expense.
- C. The CONTRACTOR shall establish all base lines for the location of the principal component parts of the work together with benchmarks and batter boards adjacent to the work. Based upon the information provided by the Contract Drawings, the CONTRACTOR shall develop and make all detail surveys necessary for construction. The CITY will furnish information and location of existing benchmarks.
- D. The CONTRACTOR shall have the responsibility to carefully preserve the benchmarks, reference points and stakes. In case of destruction thereof by the CONTRACTOR or resulting from his negligence, he shall be held liable for any expense and damage resulting therefrom and shall be responsible for any mistakes that may be caused by the unnecessary loss or disturbance of such benchmarks, reference points and stakes.
- E. Existing or new control points, property markers, and monuments that will be established or are destroyed during the normal causes of construction shall be re-established by the CONTRACTOR; and all reference ties recorded therefore shall be furnished to the ENGINEER. All computations necessary to establish the exact position of the work shall be made and preserved by the CONTRACTOR.
- F. The ENGINEER may check all or any portion of the work, and the CONTRACTOR shall afford all necessary assistance to the ENGINEER in carrying out such checks. Any necessary corrections to the work shall be performed immediately by the CONTRACTOR and he shall accept all responsibility for the accuracy and completeness of his work.

PART 2 -- PRODUCTS (Not Used)

PART 3 -- EXECUTION (Not Used)

- END OF SECTION -

SECTION 01025 - BASIS OF PAYMENT

PART 1 -- GENERAL

1.01 GENERAL

- A. Payments to the CONTRACTOR shall be made on the basis of the Proposal bid items as full and complete payment for furnishing all materials, labor, tools and equipment, and for performing all operations necessary to complete the work included in the Contract Documents. Such compensation shall also include payments for any loss or damages arising directly or indirectly from the work, or from any discrepancies between the actual quantities of work and those shown in the Contract Documents, or from any unforeseen difficulties which may be encountered during the prosecution of the work until the final acceptance by the CITY.
- B. The prices stated in the proposal include all costs and expenses for taxes, labor, equipment, materials, commissions, transportation charges and expenses, patent fees and royalties, labor for handling materials during inspection, together with any and all other costs and expenses for performing and completing the work as shown on the plans and specified herein. The Basis of Payment for an item at the price shown in the Proposal shall be in accordance with its description of the item in this Section and as related to the work specified and as shown on the Drawings. Unit prices where used will be applied to the actual quantities furnished and installed in conformance with the Contract Documents.
- C. The CONTRACTOR's attention is called to the fact that the quotations for the various items of work are intended to establish a total price for completing the work in its entirety. Should the CONTRACTOR feel that the cost of any item of work has not been established by the Proposal or Basis of Payment, he shall include the cost for that work in the last Bid Item so that his proposal for the project does reflect his total price for completing the work in its entirety.

1.02 MEASUREMENT

- A. The quantities for payment under this Contract shall be determined by actual measurement of the completed items, in place, ready for service and accepted by the CITY, in accordance with the Schedule of Payment Values as described in Section 01300, unless otherwise specified. A representative of the CONTRACTOR shall witness all field measurements.

1.03 PAYMENT ITEMS

A. Base Bid Items

1. Item No. 1 – Mobilization & Demobilization: The lump sum price bid for this item shall be full compensation for all mobilization activities, including but not limited to bonds, insurance, scheduling, labor associated with permit acquisition, temporary facilities, audio-video documentation of the existing site, preparation and submittal of shop drawings, record drawings, and all other activities necessary to prepare to complete the contract work. The payment item for mobilization and Demobilization shall not exceed 7.5% of the sum of Bid Item Nos. 2 through 4.
2. Item No. 2 – Installation of Vent Pipe at Manhole No. 10: Payment for all labor, equipment and material for all work necessary and required for the installation of Vent Pipe at Manhole No. 10. Work includes but is not limited to Installation of a concrete pedestal and vent pipe, butterfly valve and valve box, and core drilling and connection to manhole. All work is to be performed as required in the Drawings and Specifications. Work also includes restoration of affected road, driveway, grassy areas, and maintenance of traffic in accordance with FDOT Standards and/or Broward County and/or the City of Hollywood.
3. Item No. 3 – Installation of Vent Pipe at Manhole No. 6: Payment for all labor, equipment and material for all work necessary and required for the installation of Vent Pipe at Manhole No. 6. Work includes but is not limited to demolition of up to 25' of existing sidewalk, installation of a concrete pedestal and vent pipe, butterfly valve and valve box, and core drilling and connection to manhole. All work is to be performed as required in the Drawings and Specifications. Work includes restoration of affected road, driveway, grassy areas, up to 30' of 5' wide sidewalk, and maintenance of traffic in accordance with FDOT Standards and/or Broward County and/or the City of Hollywood.
4. Item No. 4 – Tyler Street Conflict Box Revision : Payment for all labor, equipment and material for all work necessary and required for the installation of four (4) manhole rings and covers, installation of internal conflict box vent pipe, and external conflict box vent pipe and riser as required in the Drawings and Specifications. Work also includes restoration of asphalt and brick pavers on Tyler Street, and restoration of the roundabout and associated vegetation, as required in the Drawings and Specifications.
5. Item No. 5 - Undefined Conditions Allowance: Included in this allowance is work associated with undefined conditions or conflicts developing from undefined conditions. All work authorized for payment will be authorized in writing by the CITY. Amount to be paid per undefined conditions or conflicts shall be negotiated or agreed to by both parties.
6. Item No. 6 – Consideration for Indemnification: In recognition of CONTRACTOR's indemnification obligations, the CITY will pay to the CONTRACTOR the specific consideration of ten dollars (\$10.00). Payment of said specific consideration shall be made at the time of the payment of the first progress estimate and the CONTRACTOR shall acknowledge payment of this consideration by letter to the CITY after receipt of the progress payment.

PART 2 -- PRODUCTS (Not Used)

PART 3 -- EXECUTION (Not Used)

- END OF SECTION -

SECTION 01070 - ABBREVIATIONS

PART 1 -- GENERAL

1.01 THE REQUIREMENT

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

1.02 ABBREVIATIONS AND ACRONYMS

AAMA	Architectural Aluminum Manufacturer's Association
AASHTO	American Association of the State Highway and Transportation Officials
ACI	American Concrete Institute
ACIFS	American Cast Iron Flange Standards
ACOE	Army Corps of Engineers
ACPA	American Concrete Pipe Association
AFBMA	Anti-Friction Bearing Manufacturer's Association, Inc.
AGMA	American Gear Manufacturer's Association
AHGDA	American Hot Dip Galvanizers Association
AI	The Asphalt Institute
AIA	American Institute of Architects
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
AITC	American Institute of Timber Construction
AMCA	Air Moving and Conditioning Association
ANSI	American National Standards Institute, Inc.
APA	American Plywood Association
API	American Petroleum Institute
APHA	American Public Health Association
APWA	American Public Works Association
ASA	Acoustical Society of America
ASAE	American Society of Agriculture Engineers
ASCE	American Society of Civil Engineers
ASHRAE	American Society of Heating, Refrigerating, and Air-Conditioning Engineers
ASLE	American Society of Lubricating Engineers

ASME American Society of Mechanical Engineers

ASMM Architectural Sheet Metal Manual

ASSE American Society of Sanitary Engineers

ASTM American Society for Testing and Materials

AWPA American Wood Preservers Association

AWPI American Wood Preservers Institute

AWS American Welding Society

AWWA American Water Works Association

BCEPGMD Broward County Environmental Protection and Growth Management
Department (formerly BCEPD)

BCHDB Broward County Health Department

CEMA Conveyor Equipment Manufacturer's Association

CMA Concrete Masonry Association

CRSI Concrete Reinforcing Steel Institute

DIPRA Ductile Iron Pipe Research Association

EIA Electronic Industries Association

ETL Electrical Test Laboratories

FBC Florida Building Code

FDEP Florida Department of Environmental Protection

FDOT Florida Department of Transportation

FS Federal Specifications

IEEE Institute of Electrical and Electronics Engineers

IES Illuminating Engineering Society

IPCEA Insulated Power Cable Engineers Association

ISA Instrument Systems and Automation

ISO International Organization for Standardization

MBMA Metal Building Manufacturers Association

MMA Monorail Manufacturers Association

MTI Marine Testing Institute

NAAM National Association of Architectural Metal Manufacturers

NACE National Association of Corrosion Engineers

NBS National Bureau of Standards

NEC National Electrical Code

NEMA National Electrical Manufacturer's Association

NFPA National Fire Protection Association

NIOSH	National Institute of Occupational Safety and Health
NIST	National Institute of Standards and Testing
NRCAN	National Roofing Contractors Association
NSF	National Science Foundation
OSHA	Occupational Safety and Health Administration
PCA	Portland Cement Association
PCM	Program Construction Manager
PMT	Program Management Team
SFWMD	South Florida Water Management District
SMACCNA	Sheet Metal and Air Conditioning Contractors National Association
SSPC	Steel Structures Painting Council
SSPWC	Standard Specifications for Public Works Construction
SFWMD	South Florida Water Management District
UL	Underwriters Laboratories, Inc.

PART 2 -- PRODUCTS

(NOT USED)

PART 3 -- EXECUTION

(NOT USED)

- END OF SECTION -

SECTION 01090 - REFERENCE STANDARDS

PART 1 -- GENERAL

1.01 WORK INCLUDED

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

1.02 REFERENCE SPECIFICATIONS, CODES, AND STANDARDS

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

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

PART 2 -- PRODUCTS

(NOT USED)

PART 3 -- EXECUTION

(NOT USED)

- END OF SECTION -

SECTION 01200 - PROJECT MEETINGS

PART 1 -- GENERAL

1.01 PRECONSTRUCTION

- A. A preconstruction meeting will be held to acquaint representatives of the CITY and various agencies with those in responsible charge of the CONTRACTOR's activities for the project. The meeting will cover such subjects as the following: insurance certificates; permits and licenses; affirmative action employment; construction schedules; cost breakdown and application for payments; material deliveries, storage and payments; shop drawings and submittals; job-site inspection by the ENGINEER; safety and emergency action procedures; operations of the existing treatment facilities; field offices, security and other housekeeping procedures; list of subcontractors; liquidated damages; communications; coordinating; and other appropriate matters.

1.02 PROGRESS

- A. A progress meeting shall be held on a bi-weekly basis for the purpose of coordinating and expediting the work. The CONTRACTOR, as a part of his obligations under the Contract, shall attend in person or by an authorized representative to attend and to act on his behalf. The ENGINEER will conduct such meetings and as necessary, with the CONTRACTOR's input, issue an agenda.
- B. In addition, the ENGINEER or CONTRACTOR may call for special job site meetings for the purpose of resolving unforeseen problems or conflicts which may impede the construction schedule. The ENGINEER will prepare a brief summary report of the decisions or understandings concerning each of the items discussed at the meeting.
- C. At bi-weekly progress meetings, the CONTRACTOR shall submit to the ENGINEER for review a current three (3) week progress schedule. This schedule submission shall include a two week look ahead schedule and reflect status of the work performed during the preceding week.

PART 2 -- PRODUCTS (Not Used)

PART 3 -- EXECUTION (Not Used)

- END OF SECTION -

SECTION 01300 - SUBMITTALS

PART 1 -- GENERAL

1.01 THE REQUIREMENT

- A. This section specifies the means of all submittals. All submittals, whether their final destination is to the CITY, ENGINEER, or other representatives of the CITY, shall be directed from the CONTRACTOR through the ENGINEER. A summary of the key types of submittals and the number of copies required is as follows:

<u>Copies to ENGINEER</u>	<u>Type of Submittal</u>
6 ¹	Construction schedule
6	Schedule of payment items
1	Audio visual preconstruction record
6	Progress estimates
6	Shop drawings
4	Certificates of compliance
2	Warranties
2 ²	Product samples
5 ²	O&M Manuals
1 ³	Record drawings

¹One USB flash drive containing the electronic source file shall be included

²Unless otherwise required in the specific Section where requested.

³One marked-up set of Drawings (Original Markup).

1.02 SUBMITTAL PROCEDURES

- A. Transmit each submittal with a form acceptable to the ENGINEER, clearly identifying the project CONTRACTOR, the enclosed material and other pertinent information specified in other parts of this section. Identify variations from Contract Documents and Product or system limitations which may be detrimental to successful performance of the completed Work. Acceptance of submittals in electronic format via email attachment or USB flash drive shall be at the discretion of the CITY and ENGINEER. USB flash drives must be accompanied by the CONTRACTOR's transmittal stating the contents of the drive. Under no circumstances will hyperlinks to internet site(s) for submittal retrieval by the CITY or ENGINEER be accepted.
- B. Revise and resubmit submittals as required. Identify all changes made since previous submittals. Resubmittals shall be noted as such.

- C. Distribute copies of reviewed submittals to concerned parties. Instruct parties to promptly report any inability to comply with provisions.

1.03 CONSTRUCTION PROGRESS SCHEDULE

- A. The CONTRACTOR shall have the capability of preparing and utilizing the specified construction progress scheduling techniques. A statement of capability shall be submitted in writing to the ENGINEER with the return of the executed Agreement to the CITY and will verify that either the CONTRACTOR's organization has in-house capability qualified to use the technique or that the CONTRACTOR employs a consultant who is so qualified. Capability shall be verified by description of the construction projects to which the CONTRACTOR or its consultant has successfully applied the scheduling technique and which were controlled throughout the duration of the project by means of systematic use and updating of the construction progress schedule, the network analysis and associated reports. The submittal shall include the name of the individual on the CONTRACTOR's staff who will be responsible for the construction progress schedule, and associated reports and for providing the required updating information of same. The CONTRACTOR shall submit its proposed progress (baseline) schedule to the ENGINEER for review and comment within thirty days of the Notice to Award. The ENGINEER shall have the authority to determine acceptability/correctness of the schedule logic and activity interrelationships. The use of extraneous, nonworking activities and activities which add restraints to the construction schedule shall not be accepted. Baseline schedules that do not meet their contract completion dates shall not be accepted.
- B. The Contractor's progress schedule (baseline and monthly updates) shall be computer generated and resource loaded. Each construction progress schedule, and associated report shall include the following tabulations: a list of activities in numerical order, a list of activity precedence, schedules sequenced by Early Start Date, Total Float, and Late Start Date. Each schedule, and report shall include the following minimum items.
 - 1. Activity Numbers
 - 2. Estimated Duration
 - 3. Activity Description
 - 4. Early Start Date (Calendar Dated)
 - 5. Early Finish Date (Calendar Dated)
 - 6. Latest Allowable Start Date (Calendar Dated)
 - 7. Latest Allowable Finish Date (Calendar Dated)
 - 8. Status (whether critical)
 - 9. Estimated Cost of the Activity

10. Total Float and Free Float

- C. In addition, each construction progress schedule, network analysis and report shall be prefaced with the following summary data:
1. Contract Name and Number
 2. CONTRACTOR'S Name
 3. Contract Duration and Float
 4. Contract Schedule
 5. The Effective or Starting Date of the Schedule (the date indicated in the Notice-to-Proceed)
- D. The work day to calendar date correlation shall be based on an 8-hour day and 40-hour week with adequate allowance for holidays and all other special requirements of the Work. A total of five (5) days for adverse weather shall also be allowed for in the progress schedule such that the CONTRACTOR can secure the jobsite as specified in Section 01560.
- E. If the CONTRACTOR desires to make changes in its method of operating which affect the construction progress schedule and related items, the CONTRACTOR shall notify the ENGINEER in writing stating what changes are proposed and the reason for the change. If the ENGINEER accepts these changes, in writing, the CONTRACTOR shall revise and submit, without additional cost to the CITY, all of the affected portions of the construction progress schedule, and associated reports. The construction progress schedule and related items shall be adjusted by the CONTRACTOR only after prior acceptance, in writing by the ENGINEER. Adjustments may consist of changing portions of the activity sequence, activity durations, division of activities, or other adjustments as may be required. The addition of extraneous, nonworking activities and activities which add restraints to the construction progress schedule shall not be accepted.
- F. Except where earlier completions are specified, schedule dates which show completion of all Work prior to the contract completion date shall, in no event, be the basis for claim for delay against the CITY by the CONTRACTOR.
- G. Construction progress schedules and related items which contain activities showing negative float or which extend beyond the contract completion date will not be accepted by the ENGINEER.
- H. Whenever it becomes apparent from the current construction progress schedule and associated reports that delays to the critical path have resulted and the contract completion date will not be met, or when so directed by the ENGINEER, the CONTRACTOR shall take some or all of the following actions at no additional cost to the CITY. They shall submit to the ENGINEER for approval, a written statement of the steps they intend to take to remove or arrest the delay to the critical path in the current

construction progress schedule, including a computer generated schedule revision to reflect proposed actions.

1. Increase construction manpower in such quantities and crafts as will substantially eliminate the backlog of work.
 2. Increase the number of working hours per shift, shifts per day, working days per week, the amount of construction equipment, or any combination of the foregoing, sufficiently to substantially eliminate the backlog of work.
 3. Reschedule activities to achieve maximum practical concurrency of accomplishment of activities and comply with the revised schedule.
- I. If when so requested by the ENGINEER, the CONTRACTOR should fail to submit a written statement of the steps they intend to take or should fail to take such steps as reviewed and accepted in writing by the ENGINEER, the ENGINEER may direct the CONTRACTOR to increase the level of effort in manpower (trades), equipment and work schedule (overtime, weekend and holiday work, etc.) to be employed by the CONTRACTOR in order to remove or arrest the delay to the critical path in the current construction progress schedule, and the CONTRACTOR shall promptly provide such level of effort at no additional cost to the CITY.
- J. If the completion of any activity, whether or not critical, falls more than 100 percent behind its previously scheduled and accepted duration, the CONTRACTOR shall submit for approval a schedule adjustment showing each such activity divided into two activities reflecting completed versus uncompleted work.
- K. Shop drawings which are not approved on the first submittal or within the time scheduled, and equipment which does not pass the specified tests and certifications shall be immediately rescheduled. The CONTRACTOR shall allow a 21 day review period for all shop drawings and other submittals requiring approval by the ENGINEER.
- L. The contract time will be adjusted only in accordance with the General Requirements and other portions of the Contract Documents as may be applicable. If the ENGINEER finds that the CONTRACTOR is entitled to any extension of the contract completion date, the ENGINEER's determination as to the total number of days extension shall be based upon the current construction progress schedule and on all data relevant to the extension. Such data shall be included in the next updating of the schedule and related items. Actual delays in activities which, according to the construction progress schedule, do not affect any contract completion date will not be the basis for a change therein.
- M. From time to time it may be necessary for the contract schedule of completion time to be adjusted by the CITY in accordance with the General Requirements and other portions of the Contract Documents as may be applicable. Under such conditions, the ENGINEER will direct the CONTRACTOR to reschedule the Work or contract completion time to reflect the changed conditions, and the CONTRACTOR shall revise the construction progress schedule and related items accordingly, at no additional cost to the CITY.

- N. Available float time may be used by the CITY through the CITY'S ENGINEER.
- O. The CITY controls the float time and, therefore, without obligation to extend either the overall completion date or any intermediate completion dates, the CITY may initiate changes that absorb float time only. CITY initiated changes that affect the critical path on the network diagram shall be the sole grounds for extending the completion dates. CONTRACTOR initiated changes that encroach on the float time may be accomplished only with the CITY'S concurrence. Such changes, however, shall give way to CITY initiated changes competing for the same float time.
- P. To the extent that the construction project schedule, or associated report or any revision thereof shows anything not jointly agreed upon or fails to show anything jointly agreed upon, it shall not be deemed to have been accepted by the ENGINEER. Failure to include on a schedule 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 review of the schedule by the ENGINEER.
- Q. Review and acceptance of the construction progress schedule, and related reports, by the ENGINEER is advisory only and shall not relieve the CONTRACTOR of the responsibility for accomplishing the Work within the contract completion date. Omissions and errors in the construction progress schedule, and related reports shall not excuse performance less than that required by the Contract and in no way make the ENGINEER an insurer of the CONTRACTOR'S success or liable for time or cost overruns flowing from any shortcomings in the construction progress schedule, and related reports.
- R. The CONTRACTOR shall present and discuss the proposed schedule at the preconstruction conference.
- S. The construction progress schedule shall be based upon the precedence diagramming method of scheduling and shall be prepared in the form of a horizontal bar chart showing in detail the proposed sequence of the Work and identifying all construction activities included but not limited to yard piping, all structures and treatment units and all related Work specified herein to be performed under the Contract. The schedule shall be time scaled, identifying the first day of each week, with the estimated date of starting and completion of each stage of the Work in order to complete the project within the contract time. The project critical path shall be clearly identified in color or by other means acceptable to the ENGINEER.
- T. The progress schedule shall be plotted on 22-inch by 34-inch and 11-inch by 17-inch paper and shall be revised and updated monthly, depicting progress through the last day of the current month and scheduled progress through completion. Six (one 22-inch by 34-inch and five 11-inch by 17-inch), schedules, required schedule "sorts" (tabulations) and an electronic copy of the baseline schedule shall be submitted for review and acceptance. Six (one 22-inch by 34-inch and four 11-inch x 17-inch) up-to-date copies of the schedule and six copies of tabulations and an electronic copy shall

be submitted along with the application for monthly progress payments for the same period.

- U. The construction progress schedule shall be developed and maintained using Primavera Sure Trak as manufactured by Primavera Systems, Inc., or equal.

1.04 SCHEDULE OF PAYMENT VALUES

- A. The CONTRACTOR shall submit a Schedule of Payment Values, in accordance with Section 01025, for all items in the proposal that are to be paid for on a lump sum basis. The schedule shall contain the labor and material values of the component parts of Work for the purpose of making progress payments during the construction period. The Schedule of Payment Values shall directly correlate on an item by item basis (unless otherwise accepted by the ENGINEER) to each individual activity detailed in the construction progress schedule.
- B. The schedule shall be given in sufficient detail for the proper identification of Work accomplished. Each item shall include its proportional share of all costs including the CONTRACTOR's overhead, contingencies and profit. The sum of all scheduled items shall equal the total value of the Contract.
- C. If the CONTRACTOR anticipates the need for payment for materials stored on the project site, it shall also submit a separate list covering the cost of materials, delivered and unloaded with taxes paid. This list shall also include the installed value of the item with coded reference to the Work items in the Schedule of Payment Items.
- D. The CONTRACTOR shall expand or modify the above schedule and materials listing as required by the ENGINEER'S initial or subsequent reviews.
- E. The CONTRACTOR shall update the Schedule of Payment Values monthly for reviewing by the ENGINEER. The payment applications shall be reviewed by the ENGINEER in accordance with the updated Schedule of Payment Values.

1.05 SHOP DRAWINGS, PROJECT DATA AND SAMPLES

- A. General: A Shop Drawing Submittal Schedule shall be provided by the CONTRACTOR within thirty (30) days of the Notice to Proceed.
- B. The CONTRACTOR shall furnish for review ten (10) copies of shop drawings, project data, samples and other submittal items required by the Contract Documents. Three (3) copies shall be returned to the CONTRACTOR stamped "Furnish as Submitted" or "Furnish as Corrected". Where major corrections are indicated, two (2) copies will be returned stamped "Revise and Resubmit" and a new submittal is required (10 copies).
- C. The review of the CONTRACTOR'S submissions shall in no way relieve the CONTRACTOR of any of his responsibilities under the Contract. An acceptance of a submission shall be interpreted to mean that there are no specific objections to the submitted material, subject to conformance with the Contract Drawings and Specifications.

- D. All submissions shall be dated and properly referenced to the specifications section and Contract Drawing number. The submittal number shall match the following submittal numbering system (or an equivalent system as approved by the ENGINEER):

Submittal Numbering System

1. Package ID: The package number will reflect the CSI (specification) section number as it appears in the specifications.
2. Subgroup ID: The submittal number will include the CSI number followed by two additional codes. The first will define the type of submittal as follows:
 - 01 Product Data, Specifications, Cut Sheets, Manufacturers certification or approval letters.
 - 02 Shop Drawings
 - 03 Product samples and mock-ups
 - 04 Special requirements as required in the contract documents
 - 05 As-Built Drawings
 - 06 Warranties
 - 07 O&M
 - 08 Spare Parts

The second code will identify individual submittals within that submittal type. The number to the left of the decimal represents the submittal number and the number to the right of the decimal represents the revision number.

Example:

<u>Package</u>	<u>Submittal</u>	<u>Description</u>
03300	03300-01-1.1	Concrete Admixture A, First Submittal
06400	06400-01-3.2	← Re-submittal
		← Third Submittal
		← Product Data
		← Finish Carpentry

By the following this code system, all submittals may be entered into the Document Tracking System prior to receipt of submittals. When a particular submittal is received, locate the entry in the Document Tracking project file, add the appropriate information and process. The Document Tracking System will provide the next sequence number.

- E. Shop Drawings and Project Data within practical limits shall be submitted as a single complete package for any operating system and shall include all items of equipment and mechanical units involved in the functioning of such system. Where applicable, the submission shall include elementary wiring diagrams showing circuit functioning and necessary interconnection wiring diagrams for construction.
- F. All submissions shall bear the CONTRACTOR'S stamp certifying that they have been checked for conformance and accuracy. Submissions without the CONTRACTOR'S stamp of approval will not be reviewed by the ENGINEER and will be returned to the CONTRACTOR.
- G. For any submission containing any departure from the Contract Documents and the CONTRACTOR shall include proper explanation in his letter of submittal.
- H. Work on fabricated or special items shall not be commenced until the required submission information has been reviewed and accepted.
- I. Standard items shall not be assembled or shipped until the required submission information has been reviewed and accepted.
- J. Prior review actions shall not relieve the CONTRACTOR of the responsibility for correcting errors, deviations, and/or omissions discovered at a later date.
- K. Shop Drawings: Shop Drawings include, but are not limited to, layout drawings, installation drawings, construction drawings, certified and interconnecting wiring diagrams, etc. The CONTRACTOR shall be responsible for security of all the information, details, dimension, drawings, etc. necessary to prepare submission drawings required and necessary under this Contract and to fulfill all other requirements of his Contract. The CONTRACTOR shall secure such information, details, drawings, etc. from all possible sources including the Contract Drawings, drawings prepared by subcontractors, ENGINEER, manufacturers, CONTRACTORS, etc.
- L. Submission drawings shall accurately and clearly present the following:
 - 1. All working and installation dimensions.
 - 2. Arrangement and sectional views.
 - 3. Units of equipment in the proposed position for installation, details of required attachments and connections and dimensioned locations between units and in relation to the structures.

4. Necessary details and information for making connections between the various trades including but not limited to, power supplies and interconnection wiring between units, accessories, appurtenances, etc.
 - M. Product Data: Where manufacturer's publications in the form of catalogs, brochures, illustrations, or other data sheets are submitted in lieu of prepared shop drawings, such submission shall specifically indicate the particular item offered. Identification of such items and relative pertinent information shall be made with indelible ink. Submissions showing only general information will not be accepted.
 - N. Product data shall include materials of construction, dimensions, performance characteristics, capacities, wiring diagrams, piping and controls, etc.
 - O. Samples: CONTRACTOR shall furnish for review all samples as required by the Contract Documents or requested by the ENGINEER.
 - P. Samples shall be of sufficient size or quantity to clearly illustrate the quality, type, range of color, finish or texture and shall be properly labeled to show the nature of the work where the material represented by the sample will be used.
 - Q. Samples shall be checked by the CONTRACTOR for conformance to the Contract Documents before being submitted to the ENGINEER and shall bear the CONTRACTOR'S stamp certifying that they have been so checked. Transportation charges on samples submitted to the ENGINEER shall be prepaid by the CONTRACTOR.
 - R. ENGINEER's review will be for compliance with the Contract Documents, and his comments will be transmitted to the CONTRACTOR with reasonable promptness.
 - S. Accepted samples will establish the standards by which the completed work will be judged.
- 1.06 OPERATION AND MAINTENANCE INSTRUCTIONS (MANUALS)
- A. Individual Instructions: The CONTRACTOR , through manufacturer's representatives or other qualified individuals, shall provide instruction of designated employees of the CITY in the operation and care of all equipment furnished.
 - B. Written Instructions: The CONTRACTOR shall furnish and deliver to the ENGINEER, prior to the fifty percent completion point of construction, and no later than thirty (30) days prior to operator training, ten (10) complete sets of instructions, technical bulletins, and any other printed matter such as diagrams, prints or drawings, containing full information required for the proper operation, maintenance, and repair of the equipment. As a minimum, the following shall be included in this submittal:
 1. Operating Instructions
 2. Troubleshooting Information

3. Maintenance Schedule(s)
4. Lubrication Schedule
5. Location of Service Centers
6. Parts Diagram and List
7. Spare Parts List (spare parts furnished shall be defined)
8. Special Tools List
9. Installation Instructions
10. Assembly & Erection Drawings
11. Dimensional Drawings
12. Wiring Diagram(s)
13. Storage Instructions

- C. Availability of the O&M Manual is a prerequisite to the operation and acceptance of the system. Instructions shall be bound together in appropriate three-ring binders with a searchable electronic PDF provided, complete with Chapter bookmarks. A detailed Table of Contents shall be provided for each set. Written operation and maintenance instructions shall be required for all equipment items supplied. The amount of detail shall be commensurate with the complexity of the equipment item. They shall include all mechanical and electrical equipment such as valves, etc.
- D. Information not applicable to the specific piece of equipment installed on this project shall be struck from the submission. Information provided shall include a source of replacement parts and names of service representatives, including address and telephone number.

1.07 RECORD DRAWINGS

- A. The CONTRACTOR shall keep and maintain, at the job site, one record set of Drawings. On these, it shall mark all project conditions, locations, configurations, and any other changes or deviations which may vary from the details represented on the original Contract Drawings, including buried or concealed construction and utility features which are revealed during the course of construction. Special attention shall be given to recording the horizontal and vertical location of all buried utilities that differ from the locations indicated, or which were not indicated on the Drawings. As-Built furnished grade information shall be included on the record drawings. Said record drawings shall be supplemented by detailed sketches as necessary or directed to indicate, fully, the Work as actually constructed. These master record drawings of the CONTRACTOR'S representation of as-build conditions, including all revisions made

necessary by addenda and change orders shall be maintained up-to-date during the progress of Work.

- B. The record drawings shall be received on the 20th working day of every third month after the month in which the final notice to proceed is given as well as on completion of Work. Failure to maintain the record drawings up-to-date shall be grounds of withholding monthly progress payments until such time as the record drawings are brought up-to-date.
- C. In the case of those drawings which depict the detail requirement for equipment to the assembled and wired in the factory, such as motor control centers and the like, the record drawing shall be updated by indicating those portions which are superseded by change order drawings or final shop drawings, and by including appropriate reference information describing the change orders by number and the shop drawings by manufacturer, drawing, and revision numbers.
- D. Record drawings shall be accessible to the ENGINEER at all times during the construction period.
- E. Final payment will not be acted upon until the CONTRACTOR prepared record drawings have been delivered to the ENGINEER. Said up-to-date record drawings shall be in the form of a set of prints with carefully plotted information overlaid in pencil.
- F. Upon substantial completion of the Work and prior to final acceptance, the CONTRACTOR shall finalize and deliver a complete set of record drawings to the ENGINEER for transmittal to the CITY, conforming to the construction records of the CONTRACTOR. This set of drawings shall consist of corrected drawings showing the reported location of the Work. The information submitted by the CONTRACTOR and incorporated in the Record Drawings will be assumed to be correct, and the ENGINEER will not be responsible for the accuracy of such information, and for any errors or omissions which may appear on the Record Drawings as a result.
- G. The information submitted by the CONTRACTOR in the record drawings shall be certified by a land surveyor registered in the State of Florida.
- H. The record drawings shall show the exact location of all structures and all mains within the right-of-way or easement, size and type of material of mains, all deflection points (vertical and horizontal), top pipe elevations and stationing at 100-foot increments, and exact dimensions and locations of all fittings and valves.

1.08 WARRANTIES

- A. Original warranties, called for in the Contract Documents, shall be submitted to the CITY through the ENGINEER. When warranties are required, they shall be submitted prior to request for payment.
- B. When advance copies of warranties are requested, they shall be submitted with, and considered as shop drawings.

- C. The CONTRACTOR shall warrant to the CITY that all material and labor used in the construction are covered by his warrantee for a minimum of a one year period upon approval and acceptance by the CITY. The CONTRACTOR shall replace or repair defects at no cost to the CITY during the warrantee period. No visible or potential leakage shall be allowed during the warrantee period.

1.09 CERTIFICATES

- A. Copies of certificates of compliance and test reports shall be submitted for requested items to the ENGINEER prior to request for payment.

1.10 AUDIO-VISUAL PRECONSTRUCTION RECORD

- A. General: Prior to commencing work, the CONTRACTOR shall have a continuous color audio-video digital video recording taken of the entire Project, including adjacent work areas, plant site and all other areas that will be disturbed by the Contractor's operations, to serve as a record of preconstruction conditions. No construction shall begin prior to review and acceptance of the discs covering the respective, affected construction area by the ENGINEER. The ENGINEER shall have the authority to reject all or any portion of the recording not conforming to the specifications and order that it be redone at no additional charge. The CONTRACTOR shall reschedule unacceptable coverage within five days after being notified. The ENGINEER shall designate those areas, if any, to be omitted from or added to the audio-video coverage. Recordings shall not be performed more than ninety days prior to construction in any area. Recording format shall be MP4 audio-video, minimum 1280 x 720 resolution, and playable using Windows Media Player. CONTRACTOR shall submit MP4 video via three (3) flash drives. CDs and/or DVDs will not be accepted. All flash drives and written records shall become property of the City.
- B. Services: The CONTRACTOR shall engage the services of a professional electrographer. The color video shall be prepared by a responsible commercial firm known to be skilled and regularly engaged in the business of preconstruction color audio-video video documentation. The electrographer shall furnish to the ENGINEER a list of all equipment to be used for the audio-video recording, i.e., manufacturer's name, model number, specifications and other pertinent information. Additional information to be furnished by the electrographer is the names and addresses of two references that the electrographer has performed color audio-video recordings for on projects of a similar nature within the last twelve months.
- C. Equipment: All equipment, accessories, materials and labor to perform this service shall be furnished by the CONTRACTOR.
 - 1. The total audio-video system shall reproduce bright, sharp, clear pictures with accurate colors and shall be free from distortion, tearing, rolls or any other form of imperfection. The audio portion of the recording shall reproduce the commentary of the camera operator with proper volume and clarity, and be free from distortion and interruptions.

2. When conventional wheeled vehicles are used, the distance from the camera lens to the ground shall not be less than twelve feet. In some instances, audio-video coverage may be required in areas not accessible by conventional wheeled vehicles. Such coverage shall be obtained by walking or special conveyance acceptable to the ENGINEER.
 3. The color video camera used in the recording system shall have a horizontal resolution of 300 lines at center, a luminance signal to noise ratio of 45 dB and a minimum illumination requirement of twenty-five foot-candles.
- E. Recorded Information - Audio: Each disc shall begin with the current date, project name and municipality and be followed by the general location; i.e., process structure, or area, viewing side and direction of progress. The audio track shall consist of an original live recording. The recording shall contain the narrative commentary of the electrographer, recorded simultaneously with his fixed elevation video record of the zone of influence of construction.
- F. Recorded Information - Video: All video recordings must, by electronic means, display continuously and simultaneously, generated with the actual recording, transparent digital information to include the date and time of recording. The date information shall contain the month, day and year. The time information shall contain the hours, minutes, and seconds. Additional information shall be displayed periodically. Such information shall include, but not be limited to, project name, process structure or area, and the viewing side. This transparent information shall appear on the extreme upper left hand third of the screen.
- G. Conditions for Recording: All recording shall be done during times of good visibility. No recording shall be done during precipitation, mist or fog. The recording shall only be done when sufficient sunlight is present to properly illuminate the subjects of recordings and to produce bright, sharp video recordings of those subjects.
- H. Video Coverage: Video coverage shall include all surface features located within the zone of influence of construction supported by appropriate audio coverage. Such coverage shall include, but not be limited to, existing driveways, sidewalks, curbs, pavement, landscaping, fences, signs and interior and exterior of existing structures affected by the work and the exteriors of structures adjacent to the work, and any other on-site area that will be occupied or impacted by the CONTRACTOR or any of his subcontractors or suppliers within the area covered.

1.11 PROJECT PHOTOGRAPHS

- A. The CONTRACTOR shall engage and pay for the services of a professional photographer for ground level progress pictures each month during the course of the construction activities. The photographer's periodic visits and work shall be coordinated with the CITY. A total of 12 progress photographs in electronic format of completed work is required each month. A photograph (picture) shall be defined as one exposure. Meta data shall include the following information:
1. Name of Facility

2. Name/number of Structure
3. Photo Number
4. Date picture was taken
5. Description
6. Name of photographer
7. Owner's witness

PART 2 -- PRODUCTS (Not Used)

PART 3 -- EXECUTION (Not Used)

- END OF SECTION -

SECTION 01400 - TESTING AND INSPECTION

PART 1 -- GENERAL

- A. All testing and inspection will be in accordance with Article 12 of the General Conditions.
- B. The work or actions of the testing laboratory shall in no way relieve the CONTRACTOR of his obligations under the Contract. The laboratory testing work will include such inspections and testing required by the Contract Documents, existing laws, codes, ordinances, etc. The testing laboratory will have no authority to change the requirements of the Contract Documents, nor perform or approve any of the CONTRACTOR'S work.
- C. The CONTRACTOR shall allow the ENGINEER ample time and opportunity for testing materials and equipment to be used in the work. He shall advise the ENGINEER promptly upon placing orders for materials and equipment so that arrangements may be made, if desired, for inspection before shipment from the place of manufacture. The CONTRACTOR shall at all times furnish the ENGINEER and his representatives, facilities including labor, and allow proper time for inspecting and testing materials, equipment, and workmanship. The CONTRACTOR must anticipate that possible delays may be caused him in the execution of his work due to the necessity of materials and equipment being inspected and accepted for use. The CONTRACTOR shall furnish, at his own expense, all samples of materials required by the ENGINEER for testing, and shall make his own arrangement for providing water, electric power, or fuel for the various inspections and tests of structures and equipment. As a minimum, 24-hours advance written notice shall be provided by the CONTRACTOR for rebar, structural and similar inspections by the ENGINEER. The amount of time required for advance written notice by the CONTRACTOR to the ENGINEER for other inspections depends upon other factors and shall be solely at the ENGINEER'S discretion.
- D. The CONTRACTOR shall furnish the services of representatives of the manufacturers of certain equipment, as prescribed in other sections of the Specifications. The CONTRACTOR shall also place his orders for such equipment on the basis that, after the equipment has been tested prior to final acceptance of the work, the manufacturer will furnish to the CITY the certified statements that the equipment has been installed properly and is ready to be placed in functional operation. Tests and analyses required of equipment shall be paid for by the CONTRACTOR, unless specified otherwise in the section which covers a particular piece of equipment.
- E. The CITY will bear the cost of all additional tests, inspections, or investigations undertaken by the order of the ENGINEER for the purpose of determining conformance with the Contract Documents if such test, inspection, or investigations are not specifically required by the Contract Documents, and if conformance is ascertained thereby. Whenever nonconformance is determined by the ENGINEER as a result of such test, inspections, or investigations, the CONTRACTOR shall bear the full cost thereof or shall reimburse the CITY for said cost. The cost of any additional tests and investigations, which are ordered by the ENGINEER to ascertain subsequent conformance with the Contract Documents, shall be borne by the CONTRACTOR.

PART 2 -- PRODUCTS (Not Used)

PART 3 -- EXECUTION (Not Used)

- END OF SECTION -

SECTION 01500 - CONSTRUCTION CONSIDERATIONS

PART 1 -- GENERAL

1.01 HYDRAULIC UPLIFT ON STRUCTURES

- A. The CONTRACTOR shall be completely responsible for any tanks, wet wells, pipelines, manholes, foundations, cellars, or similar structures that may become buoyant during the construction operations due to the ground water, floods or buoyancy of piping caused due to the placement of flowable backfills before the structure is put into operation. Should there be any possibility of buoyancy of a pipeline or structure, the CONTRACTOR shall take the necessary steps to prevent its buoyancy. Damage to any structures due to floating or flooding shall be repaired, or the structures replaced at the CONTRACTOR'S expense.

1.02 WATER TIGHTNESS OF STRUCTURES

- A. General: It is the intent of these specifications that all concrete work, sealing work around built-in items and penetrations be performed as required to ensure that groundwater, rainwater, wastewater, chemical solutions or other process liquids in tanks, wetwells, channels, and containers will not leak into any buildings and/or equipment rooms, pipe galleries, habitable areas, or other generally dry areas.
 - 1. The required watertightness shall be achieved by quality concrete construction and proper sealing of all joints and penetrations.
 - 2. Each unit shall be tested separately, and the leakage tests shall be made prior to backfilling and before equipment is installed unless otherwise approved by the ENGINEER.
 - 3. The CONTRACTOR shall provide at his own expense all labor, material, temporary bulkheads, pumps, water, measuring devices, etc., necessary to perform the required test.
- B. Built-in Items and Penetrations: All pipe sleeves, built-in items and penetrations shall be sealed as detailed and as required to ensure a continuous watertight seal.

1.03 CUTTING AND PATCHING

- A. The CONTRACTOR shall perform all cutting and patching of his work that may be required to make its several parts come together properly and fit it to receive or be received by such other work. The CONTRACTOR shall not endanger any work of others by cutting, excavating or otherwise altering their work and shall only cut or alter work with the written consent of the ENGINEER and of the other contractors whose work will be affected.

1.04 ABANDONMENT AND SALVAGE OF EXISTING FACILITIES

- A. General: The scope of work requires the CONTRACTOR to interface with existing structures, and piping which will be abandoned or otherwise removed and/or relocated

as part of the work. Prior to beginning any work associated with existing facilities to be abandoned, salvaged, or otherwise removed or relocated, the CONTRACTOR shall inform the CITY and the ENGINEER of his intent so that all arrangements can be made with the CITY for isolating pipelines (where possible) or otherwise removing existing facilities from service to the extent possible. The CONTRACTOR shall not proceed without written authorization from the CITY.

- B. Pipelines: The CONTRACTOR shall abandon, salvage or otherwise remove existing pipelines or segments of existing pipelines shown to be abandoned in place, salvaged, or removed as part of the contract work. Unless otherwise indicated in the Contract Documents, all piping shown on the Drawings to be abandoned shall be abandoned in place. Pipe shown to be abandoned need only be removed a minimum three feet clear of new utilities to be installed. Abandon-in-place shall be defined as installing plugs, or other permanent closure, as reviewed and accepted by the CITY, on all termination's, open ends or ends of pipe designated as being cut, capped and anchored in an acceptable manner. The pipe will remain buried unless otherwise noted.
- C. Piping indicated on the Drawings as being removed, or any piping to be abandoned which interferes with new structures or piping, shall be excavated and removed using methods which will not disturb adjacent piping or other facilities. All pipe materials shall be subject to salvage by the CITY as defined below. Any remaining piping on both ends of pipe segments removed shall be abandoned in-place, per the above definition. After piping has been removed, the CONTRACTOR shall backfill the excavated area in accordance with requirements set forth in other sections of these specifications.
- D. Equipment: The CONTRACTOR shall abandon, salvage or otherwise remove existing equipment or other facilities as shown on the Contract Drawings or indicated herein. In all cases, the CONTRACTOR shall exercise caution when handling the existing equipment so as not to disturb or damage adjacent facilities. The CONTRACTOR shall make all repairs to adjacent facilities which may be damaged as a result of the CONTRACTOR's efforts in abandoning, salvaging or otherwise removing existing facilities, at no additional cost to the CITY.
- E. Salvage: The CITY may desire to salvage certain items of existing equipment which are to be dismantled and removed during the course of construction. Prior to removal of any existing equipment or piping from the site of work, the CONTRACTOR shall ascertain from the CITY whether or not the particular item or items are to be salvaged. Items to be salvaged shall be stockpiled on the site, in a location as designated by the CITY. All other items of equipment shall be disposed of off-site by the CONTRACTOR at his own expense, in accordance with applicable laws, ordinances and regulations.

1.05 DIMENSIONS OF EXISTING STRUCTURES

- A. Where the dimensions and locations of existing structures are of critical importance in the installation or connection of new work, the CONTRACTOR shall verify such dimensions and locations in the field before the fabrication of any materials or equipment which is dependent on the correctness of such information.

1.06 REHABILITATION

- A. Certain areas of existing structures, piping, conduits, and the like will be affected by work necessary to complete modifications under this Contract. The CONTRACTOR shall be responsible to rehabilitate those areas affected by its construction activities.
- B. Where new rectangular openings are to be installed in concrete or concrete masonry walls or floors, the CONTRACTOR shall score the edges of each opening (both sides of wall or elevated slab) by saw cutting clean straight lines to a minimum depth of one inch and then chipping out the concrete. Alternately, the opening can be formed by saw cutting completely through the slab or wall. Saw cuts deeper than one inch (or the depth of cover over existing reinforcing steel, whichever is less) shall not be allowed to extend beyond the limits of the opening. Corners shall be made square and true by a combination of core drilling, chipping, or grinding. All necessary precautions shall be taken during removal of concrete to prevent debris from falling and damaging adjacent equipment or piping. Saw cuts allowed to extend beyond the opening shall be repaired by filling with nonshrink grout. The concrete around any exposed reinforcement steel shall be chipped back and exposed reinforcement steel cut a minimum of 1-1/2 inches from the finished face of the new opening. The inside face of the new opening shall be grout to fill any voids and cover the exposed aggregate and shall be trowel-finished to provide a plumb and square opening.
- C. Where new piping is to be connected to existing piping, the existing piping shall be cut square and the ends properly prepared for the connection shown on the drawings. Any damage to the lining and coating of the existing piping shall be repaired by the CONTRACTOR.
- D. Where existing equipment, equipment pads and bases, piping, piping supports, electrical panels and devices, conduits, and associated appurtenances are removed, the CONTRACTOR shall rehabilitate the affected area such that little or no evidence of the previous installation remains. Opening in concrete floors, walls, and ceiling from piping, conduit, and fastener penetrations shall be filled with nonshrink grout and finished to match the adjacent area. Concrete pads and bases for equipment and supports shall be removed by chipping away concrete and cutting any exposed reinforced steel and anchor bolts a minimum of 1-1/2 inches below finished grade. The area of concrete to be rehabilitated shall be scored by saw cutting clean, straight lines to a minimum depth of 1-1/2 inches, and all concrete within the scored lines removed to a minimum depth of 1-1/2 inches. The area within the scored lines shall be patched with nonshrink grout to match the adjacent grade and finish. Abandoned connections to piping and conduits shall be terminated with blind flanges, caps, and plugs suited for the material, type, and service of the pipe or conduit.
- E. Where existing structural steel members are removed or modified, the surface of the remaining existing steel members damaged by construction activities shall be repaired. The affected areas shall be surface prepared and coated in accordance with Division 9.
- F. Disposal of Debris: All debris, materials, piping, and miscellaneous waste products from the work described in this section shall be removed from the project as soon as possible. They shall be disposed of in accordance with applicable federal, state, and

local regulations. The CONTRACTOR is responsible for determining these regulations and shall bear all costs or retain any profit associated with disposal of these items.

1.07 INSTALLATION OF EQUIPMENT

- A. CONTRACTOR shall have on hand sufficient personnel, proper equipment, and machinery of ample capacity to facilitate the work.
- B. CONTRACTOR shall be responsible for locating, aligning and leveling all equipment and shall employ a licensed surveyor to set all lines and levels of equipment to the accuracy required.
- C. Complete manufacturers installation instructions, including permissible tolerances, shall be furnished in duplicate with each unit of equipment or set of identical units.
- D. All equipment shall be installed in accordance with the shop drawings; inclusive of manufacturer's specifications, drawings and tolerances; under the direct supervision of the required manufacturer's ENGINEER. No instructions shall be issued that are contrary to written specifications without prior written approval by the CITY's ENGINEER.
- E. Equipment shall be erected in a neat and workmanlike manner on the foundations at the locations and elevations shown on the drawings unless otherwise indicated by the ENGINEER during installation.

1.08 SUPERVISION BY MANUFACTURER'S REPRESENTATIVES

- A. The CONTRACTOR shall provide the services of qualified equipment manufacturer's technical representatives who shall adequately supervise the installation and testing of all equipment furnished under this Contract and instruct the CONTRACTOR's personnel and CITY's operating personnel in its maintenance and operation.

1.09 EQUIPMENT MANUFACTURER'S CERTIFICATION

- A. As a condition precedent to acceptance of equipment installed and operating, the CONTRACTOR will provide the CITY with written certification, obtained from each company manufacturing equipment for the Project, that the equipment is installed and does operate in accordance with the specifications and manufacturer's recommendations.

1.10 SLEEVES AND OPENINGS

- A. The CONTRACTOR shall provide all openings, chases, etc., to fit his own work and that of any other subcontractors and contractors. All such openings or chases shown on the Contract Drawings, or reasonably implied thereby, or as confirmed or modified by shop, setting or erecting drawings approved by the ENGINEER, shall be provided by the CONTRACTOR.
- B. Where pipes or conduits are to pass through slabs or walls, or where equipment frames or supports are to be installed as integral part of an opening, the sleeves, opening,

forms or frames shall be furnished by the installer of the pipes, conduits or equipment, but shall be placed by the CONTRACTOR.

- C. Where hanger inserts, anchor bolts and similar items are to be embedded in concrete as an integral part of a slab or wall, they shall be furnished by the installer of the pipe or other equipment requiring the hanger, etc. but shall be placed by the CONTRACTOR.
- D. When requested by the CONTRACTOR, the installer of the pipes, conduit, or equipment, including those contractors or subcontractors who require openings or chases in slabs and walls for passage of ducts, mounting or equipment, etc., shall furnish all necessary information, instructions, and materials to effect accurate installation of the required openings, chases, sleeves, frames, inserts, etc. When such items are secured in position, and just prior to construction of the surrounding slab or wall, the subcontractor or contractor for whom the items are installed shall ascertain the proper number, locations, and settings thereof; and the CONTRACTOR shall schedule his operations so as to provide a reasonable opportunity and time interval for such inspection.
- E. Any cost resulting from correction of defective, ill-timed, or mislocated work, or for subsequent work which becomes necessary because of omitted openings, chases, sleeves, frames, inserts, etc., shall be borne by the subcontractor or contractor responsible therefor. No contractor or subcontractor shall arbitrarily cut, drill, alter, damage, or otherwise endanger the work of another Contractor. In no case shall beams lintels, or other structural members be cut without the approval of the ENGINEER. The nature and extent of any corrective or additional work shall be subject to the approval of the ENGINEER following consultation with the affected parties.

1.11 OBSTRUCTIONS

- A. All water pipes, storm drains, sanitary sewers, force mains, gas or other pipe, telephone or power cables or conduits and all other obstructions, whether or not shown, shall be temporarily supported across utility line excavations. The CONTRACTOR shall be responsible for any damage to any such pipes, conduits, or structures. Approximate locations of known water, sanitary, drainage, power and telephone installations along route of new pipelines or in the vicinity of new work are shown but must be verified in the field by the CONTRACTOR. The CONTRACTOR shall uncover these pipes, ducts, cables, etc., carefully, by hand, prior to installing new lines. Any discrepancies or differences found shall be brought to the attention of the ENGINEER in order that necessary changes may be made to permit installation of new work. These conditions are supplemental to general requirements elsewhere in the Contract Documents.

1.12 SITE CONDITIONS

- A. The CONTRACTOR acknowledges that he has investigated prior to bidding and satisfied himself as to the conditions affecting the Work, including but not restricted to those bearing upon transportation, disposal, handling and storage of materials, availability of labor, water, electric power, roads and uncertainties of weather, canal stages, tides, water tables or similar physical conditions at the site, the conformation and conditions of the ground, the character of equipment and facilities needed preliminary to and during prosecution of the Work. The CONTRACTOR further

acknowledges that he has satisfied himself as to the character, quality and quantity of surface and subsurface materials or obstacles to be encountered insofar as this information is reasonably ascertainable from an inspection of the site, or any contiguous site, as well as from information presented by the Drawings and Specifications made a part of this Contract, or any other information made available to him prior to receipt of Bids. Any failure by the CONTRACTOR to acquaint himself with the available information will not relieve him from responsibility for estimating properly the difficulty or cost of successfully performing the Work. The CITY assumes no responsibility for any conclusions or interpretations made by the CONTRACTOR on the basis of the information made available by the CITY.

1.13 SUBSURFACE INVESTIGATIONS

- A. The CONTRACTOR shall be responsible for having determined to his satisfaction, prior to the submission of his bid, the nature and location of the work, the conformation of the ground, the character and quality of the substrata, the types and quantity of materials to be encountered, the nature of the groundwater condition, the character of equipment and facilities required preliminary to and during the performance of the work, the general and local conditions and all other matters which can in any way affect the work under this Contract. The prices established for the work to be done shall reflect all costs pertaining to the work. Any claims for extras based on the substrata or ground water table conditions will be disallowed.
- B. Subsurface data are offered in good faith solely for placing the CONTRACTOR in receipt of all information available to the CITY and ENGINEER and in no event is to be considered as part of the Contract Documents. The CONTRACTOR shall interpret such sub-surface data according to his own judgment and not rely upon the same as accurately describing the sub-surface conditions, which may be found to exist.
- C. The CONTRACTOR further acknowledges that he assumes all risk contingent upon the nature of the subsurface conditions actually encountered by him in performing the work covered by the Contract, even though such actual conditions may result in the CONTRACTOR performing more or less work than he originally anticipated.
- D. In making these data available, the CITY makes no guarantee, either expressed or implied, as to their accuracy or to the accuracy of any interpretation thereof.

1.14 DIFFERING SITE CONDITIONS

- A. The CONTRACTOR shall promptly and before such conditions are disturbed, notify the CITY in writing of: (1) subsurface or latent physical conditions at the site differing materially from those indicated in this contract, or (2) unknown physical conditions at the site, of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for this contract. The CITY will promptly investigate the conditions, and if he finds that such conditions do materially so differ and cause an increase or decrease in the CONTRACTOR's cost of, or the time required for, performance of any part of the work under this contract, whether or not changed as a result of such conditions, an equitable adjustment shall be made and the contract modified in writing accordingly

1.15 PROTECTION OF PROPERTY

- A. The CONTRACTOR shall protect all property that may be affected by his work or operations. The location and extent of underground and covered facilities are not guaranteed and the CONTRACTOR is cautioned to proceed with care in order to prevent the undermining or damage to existing structures, piping, or facilities.
- B. The CONTRACTOR shall take all measures necessary to protect new and existing mechanical equipment from dust and debris. All protective measures shall be furnished, installed, lighted, ventilated, maintained, and removed at the CONTRACTOR'S own cost.
- C. When CITY water is being used, the supply source shall be protected against contamination in accordance with existing codes and regulations.
- D. In the event any of the CONTRACTOR'S activities were to disrupt or endanger any facilities, he shall at his own expense make all necessary repairs or replacements necessary to correct the situation to the satisfaction of the ENGINEER. Such work shall progress continuously to completion on a 24-hour per day, seven workday basis. The CONTRACTOR shall be responsible for the services of repair crews on call 24 hours per day for emergencies that arise involving work under this Contract.

1.16 WEATHER CONDITIONS

- A. Work that may be affected by inclement weather shall be suspended until proper conditions prevail. In the event of impending storms, the CONTRACTOR shall take necessary precautions to protect all work, materials and equipment from exposure. The CITY reserves the right, through the opinion of the ENGINEER, to order that additional protection measures over and beyond those proposed by the CONTRACTOR, be taken to safeguard all components of the project. The CONTRACTOR shall not claim any compensation for such precautionary measures so ordered, nor claim any compensation from the CITY for damage to the work from the elements of weather.

1.17 FIRE PROTECTION

- A. The CONTRACTOR shall take all necessary precautions to prevent fires at or adjacent to the work, including his own buildings and trailers. Adequate fire extinguisher and hose line stations shall be provided throughout the work area.

1.18 SAFETY AND HEALTH REQUIREMENTS

- A. The CONTRACTOR shall comply in every respect with all Federal, State and local safety and health regulations. Copies of the Federal Regulations may be obtained from the U.S. Department of Labor, Occupational Safety and Health Administration, 3200 East Oakland Park Boulevard, Room 204, Bridge Building, Fort Lauderdale, Florida 33300.
- B. The CONTRACTOR shall provide all barricades and flashing warning lights or other devices necessary to warn pedestrians and area traffic.

- C. Personnel working in contact with sewage flow or surfaces carrying wastewaters or sludges shall be immunized as recommended by the Broward County Health Department.

PART 2 -- PRODUCTS (Not Used)

PART 3 -- EXECUTION (Not Used)

- END OF SECTION -

SECTION 01510 - TEMPORARY UTILITIES

PART 1 -- GENERAL

1.01 THE REQUIREMENT

- A. The CONTRACTOR shall provide temporary telephone, light and power, heating and air conditioning, potable water service and sanitary facilities for their operations and for the construction operations of the other subcontractors of this Project at the site. The temporary services shall be provided for use throughout the construction period.
- B. The CONTRACTOR shall coordinate and install all temporary services in accordance with the requirements of the utility companies having jurisdiction and as required by applicable codes and regulations.
- C. At the completion of the work, or when the temporary services are no longer required, the facilities shall be restored to their original conditions.
- D. All costs in connection with the temporary services including, but not limited to, installation, utility company service charges, maintenance, relocation and removal shall be borne by the CONTRACTOR at no additional cost to the CITY.
- E. Some temporary facilities that may be required may be indicated on the Drawings; however, the Drawings do not necessarily show any or all of the temporary facilities that the CONTRACTOR ultimately uses to complete the work.
- F. Temporary Light and Power
 - 1. The temporary general lighting and small power requirements shall be serviced by 120/240 V, 1 phase, 3 wire temporary systems furnished and installed by the CONTRACTOR. This service shall be furnished complete with step down transformer, main disconnect, overcurrent protection, branch circuit breakers, and wiring as required; including branch circuit breakers and wiring as required for furnishing temporary power to the various connections required by the CONTRACTOR, all in accordance with the requirements of the servicing power company and applicable standards and codes. Connection to the plant emergency power system is prohibited. CITY shall not be responsible for CONTRACTOR loss of power in the event of a power interruption caused by the power company or any other event which may cause an interruption in service to the temporary light and power system. Any CONTRACTOR with a need for power other than the 120/240 V, 1 phase, 3 wire shall provide such power at their own expense.
 - 2. The CONTRACTOR shall make all necessary arrangements, and pay for all permits, inspections, and other charges for all temporary service installations. All temporary systems shall comply with and meet the approval of the ENGINEER, CITY and the local authorities having jurisdiction. All temporary electrical systems shall consist of wiring, switches, necessary insulated supports, poles, fixtures, sockets, receptacles, lamps, guards, cutouts, and fuses as required to complete such installations. The CONTRACTOR shall furnish lamps and fuses for all temporary systems furnished by

him and shall replace broken and burned out lamps, blown fuses, damaged wiring and as required to maintain these systems in adequate and safe operating condition. All such temporary light and power system shall be installed without interfering with the work of the other CONTRACTORS.

When it is necessary during the progress of construction that a temporary electrical facility installed under this Division interferes with construction operations, the CONTRACTOR shall relocate the temporary electrical facilities to maintain temporary power as required at no additional cost to the CITY. The CONTRACTOR shall be responsible at all times for any damage or injury to equipment, materials, or personnel caused by improperly protected or installed temporary installations and equipment.

3. The various CONTRACTORS doing the work at the site shall be permitted to connect into the temporary general lighting system small hand tools, such as drills, hammers, and grinders, provided that:
 - a. Equipment and tools are suitable for 120 V, single phase, 60 Hz operation and operating input does not exceed 1,500 volt-amperes.
 - b. Tools are connected to outlets of the system with only one (1) unit connected to a single outlet.
 - c. In case of overloading of circuits, the CONTRACTOR will restrict use of equipment and tools as required for correct loading.
4. The CONTRACTOR shall keep the temporary general lighting systems energized 15 minutes before the time that the earliest trade starts in the morning and de-energized 15 minutes after the time the latest trade stops. This applies to all weekdays, Monday through Friday, inclusive, which are established as regular working days.

Any CONTRACTOR requiring temporary light and power before or after the hours set forth hereinbefore, or on a Saturday, Sunday, or holiday, shall pay for the additional cost of keeping the system energized and repaired. If more than one CONTRACTOR is involved, the charges shall be prorated, such amounts to be determined from the meter readings or other acceptable means previously agreed upon by the CONTRACTORS involved. If it is necessary for any CONTRACTOR or his employees to be in any structure after regular working hours and the temporary general lighting system is not required for illumination, that CONTRACTOR shall provide such illumination required by means of flashlights, electric lanterns, or other devices not requiring use of electricity from the temporary general lighting system.

5. Each CONTRACTOR requiring additional power and lighting other than that specified herein (including power for temporary heating equipment to be provided by the CONTRACTOR) shall furnish his own service complete with all fuses, cutouts, wiring and other material and equipment necessary for a complete system between the service point and the additional power consumers and shall install his own metering equipment in accordance with the requirements of the servicing power company.

6. The temporary general lighting system shall be installed progressively in structures as the various areas are enclosed or as lighting becomes necessary because of partial enclosure. Lighting intensities shall be not less than 10 foot candles.
7. The CONTRACTOR shall provide a separate temporary night lighting circuit for construction security. This system shall be energized at the end of each normal working day and de-energized at the start of each normal working day by the CONTRACTOR. The system is to be left energized over Saturdays, Sundays, and all holidays. Lighting intensities shall be not less than 2 foot candles.
8. Electrical welders provided by each trade used in the erection and fabrication of the buildings, structures and equipment shall be provided with an independent grounding cable connected directly to the structure on which the weld is being made rather than adjacent conduit piping, etc.

Electricians and other tradesmen necessary for the required connections and operation of welding equipment and generator, standby generators and similar equipment shall be furnished by the individual CONTRACTORS. All costs for such labor and equipment shall be borne by the individual CONTRACTORS.

9. Upon completion of the work, but prior to acceptance by the CITY, the CONTRACTOR shall remove all temporary services, security lighting systems, temporary general lighting systems and all temporary electrical work from the premises.

G. Temporary Heating and Air Conditioning

1. The CONTRACTOR shall provide temporary heating, air conditioning, ventilation coverings and enclosures necessary to properly protect all work and materials against damage by dampness, heat and/or cold, to dry out the work and to facilitate work in all structures.
2. The equipment, fuel, materials, operating personnel and methods used shall be at all times satisfactory and adequate to maintain critical installation temperatures and ventilation for all work in those areas where the same is required.
3. After any structure is enclosed, the minimum temperature to be maintained is 50 degrees Fahrenheit, unless otherwise specified, where work is actually being performed.
4. Before and during the application of interior finishing, painting, etc., the CONTRACTOR shall provide sufficient heat to maintain a temperature of not less than 65 degrees Fahrenheit or greater than 85 degrees Fahrenheit.
5. Any work damaged by dampness or insufficient or abnormal heating shall be replaced by the CONTRACTOR at no additional cost to the CITY.

H. Temporary Sanitary Service

1. Sanitary conveniences, in sufficient numbers, for the use of all persons employed on the work and properly screened from public observation, shall be provided and

maintained at suitable locations by the CONTRACTOR, all as prescribed by State Labor Regulations and local ordinances. The contents of same shall be removed and disposed of in a manner consistent with local and state regulations, as the occasion requires. Each CONTRACTOR shall rigorously prohibit the committing of nuisances within, on, or about the work. Sanitary facilities shall be removed from the site when no longer required.

I. Temporary Water

1. The CONTRACTOR shall provide temporary potable water service for construction purposes, sanitary facilities, fire protection, field offices and for cleaning. The CONTRACTOR shall make all arrangements for connections to the potable water at the plant site. The CONTRACTOR shall obtain a potable water flowmeter from the Department of Public Utilities at the CITY of Hollywood.
2. The CONTRACTOR shall pay all charges associated with the potable water connection. The CONTRACTOR shall pay all charges for potable water used under this Contract.
3. Each CONTRACTOR shall supply potable water for his employees either by portable containers or drinking fountains.
4. An adequate number of hose bibbs, hoses, and watertight barrels shall be provided for the distribution of water.
5. Water service shall be extended by the CONTRACTOR and relocated as necessary to meet temporary water requirements.

J. Confined Spaces

1. The CONTRACTOR shall provide and maintain a safe working environment in confined spaces. The CONTRACTOR shall follow the applicable requirements of the OSHA Standards for Construction and NIOSH Publications for working in confined spaces.

PART 2 -- PRODUCTS (Not Used)

PART 3 -- EXECUTION (Not Used)

- END OF SECTION -

SECTION 01520 - MAINTENANCE OF FACILITIES AND SEQUENCE OF CONSTRUCTION

PART 1 -- GENERAL

1.01 GENERAL

- A. The City of Hollywood's Southern Regional Wastewater Collection System will be maintained in continuous operation during the entire period of the Contract as hereinafter specified. The intent of this specification is to outline the requirements to provide continuous treatment throughout the construction period.
- B. The CONTRACTOR has the option of providing additional temporary facilities that can eliminate a constraint, provided it is done without cost to the CITY (including additional CITY labor) and provided that all requirements of these Specifications are fulfilled. Work not specifically covered in the following paragraphs may, in general, be done at any time during the contract period, subject to the operating requirements and constraints and construction requirements outlined hereinafter. All references to days in this Section shall be consecutive calendar days.

1.02 CONSTRUCTION SCHEDULE

- A. The construction schedule shall be submitted by the CONTRACTOR in accordance with Section 01300 of these Specifications.

1.03 USE OF FACILITIES BEFORE COMPLETION

- A. The CITY reserves the right to enter and use any portion of the constructed facilities before final completion of the whole work to be done under this Contract in accordance with Article 14.2 Partial Utilization, of the General Conditions.

1.04 CONNECTION OF EXISTING SYSTEMS

- A. All connections to existing systems shall be performed in such a manner that no damage and minimal interruption is caused to the existing installation. On completion of its installation, the CONTRACTOR shall complete the connection to the existing systems in a proper manner. Any damage caused to existing installations shall be repaired or replaced by the CONTRACTOR at no additional cost to the CITY.
- B. The CONTRACTOR shall note that some of the work in this Contract will require the CONTRACTOR to connect to existing pipelines and structures. The CONTRACTOR shall be responsible for the proper containment and disposal of wastewater or other materials drained from existing pipelines and structures during construction, unless otherwise specifically noted to be performed by the CITY.
- C. The CONTRACTOR shall contain such wastewater or other materials (in accordance with all applicable codes) and shall dispose of such within the existing treatment system as approved by the CITY. The CONTRACTOR shall be responsible for the prevention of wastewater or other material spills within the Work.

1.05 COORDINATION WITH UTILITY PERSONNEL

- A. Before commencing work involving removing or placing in operation existing or new facilities or tie-ins to existing facilities, the CONTRACTOR shall notify the CITY at least ten (10) days in advance in writing. The CITY shall be responsible for removing facilities from operation as deemed necessary.
- B. Only the CITY's appointed representative can authorize the shutdown of portions of the collection system. The CONTRACTOR shall, under no circumstances, interfere with any collection system component without the CITY's authorization, in writing, and supervision. The CONTRACTOR shall notify the CITY's representative in writing a minimum of three work days prior to each scheduled service request. This notification shall be provided on the CITY's standard form, or on an approved equivalent form completed in full by the CONTRACTOR.

1.06 GENERAL CONSTRAINTS

- A. Work under the Contract shall be scheduled and performed in such a manner as to result in the least possible disruption to the operation of the collection system and to the public's use of roadways, driveways, parking areas, and utilities. Utilities shall include but not be limited to water, sewerage, irrigation, drainage structures, gas, electrical service and telephone. Prior to commencing with the work, CONTRACTOR shall perform a location investigation of existing underground utilities and facilities in accordance with Section 01530 entitled "Protection of Existing Facilities".
- B. All work by the CONTRACTOR that disrupts the normal treatment plant operations shall be shown on the Construction Schedule specified in Section 01300 and specifically scheduled with the CITY. Schedule notification shall consist of a written notice defining the work to be accomplished, the normal functions that will be interrupted, the duration of the interruption, and the mitigating effort to be performed by the CONTRACTOR. The written notice shall be submitted to the CITY ten (10) days in advance of the proposed work and the CITY will respond to the CONTRACTOR in writing within five (5) days of receipt of the notice regarding the acceptability of the proposed plan.
- C. At no time shall the CONTRACTOR undertake to close off any pipelines, or open any valves, or take any other action which would affect the operation of the existing system, except as specifically required by the drawings and specifications, until authorization is granted by the CITY and after proper notification.
- D. Temporary installations required to complete a particular aspect of the work during the allotted time period shall be determined by the CONTRACTOR and implemented by the CONTRACTOR at no additional cost to the CITY. All such temporary installations shall be subject to the review and acceptance of the CITY.
- E. Sequence of certain major events and identification of time constraints for removing existing facilities from active service and installation of new facilities are described below. No phase of work (or tasks within a phase) shall preclude or be performed in parallel with a subsequent phase unless specifically defined so in these documents. In all cases, work in each phase shall be checked out and accepted for satisfactory use, subject to the CITY's approval, prior to the CONTRACTOR proceeding to the next phase of construction.

- F. Critical events in the sequence of construction are specified herein. The outlined sequence of construction does not include all items necessary to complete the Work, but is intended to identify the sequence of critical events necessary to eliminate disruption to the CITY's facilities. It shall be understood by the CONTRACTOR that the critical events identified are not all inclusive and that additional items of work not shown are required. The sequence of construction is a precedence requirement and does not attempt to schedule the CONTRACTOR's work.
- G. Wastewater Dewatering: The CONTRACTOR shall note that wastewater dewatering of existing pipelines and structures is required. The CONTRACTOR shall be responsible for the proper containment and disposal of wastewater, chemicals, etc. drained from existing pipelines and structures during construction. The CONTRACTOR shall contain such wastewater, chemical, etc. in accordance with all applicable codes and shall dispose of such to an on-site wastewater basin as designated by the CITY. The CONTRACTOR shall be responsible for the prevention of wastewater, chemicals, etc. spills within the work area. Refer to Division 2 for additional requirements and related requirements for construction dewatering.
- H. Cancellation of Planned Shutdown: A planned shutdown in accordance with the Contract Documents may be canceled by the CITY upon 24 hour notification by the CITY to the CONTRACTOR. Cancellations shall be expected due to wet weather conditions or other conditions beyond control of the CITY or CONTRACTOR. All efforts shall be made by the CONTRACTOR to check weather forecasts and the like prior to scheduling shutdowns. The CITY shall not be responsible for any additional costs associated with the cancellation of a planned shutdown.
- I. Treatment Plant Access: CONTRACTOR shall maintain access for plant personnel to all treatment plant unit processes at all times. If demolition, construction, or rehabilitation activities impede or obstruct access to any unit process, CONTRACTOR shall provide a temporary means for access.

1.07 OVERALL SEQUENCE OF CONSTRUCTION

A. Mobilization/Site Preparation:

1. Mobilize for work – Set up staging area as per Drawings, obtain any permits required, develop and submit construction schedule, submit shop drawing schedule and begin shop drawing submittals and procurement of materials.
2. For interfering utilities, construct new utilities up to tie-in points, perform tests, and then make final connections with minimum amount of shutdown time. After acceptance of new utilities, remove existing interfering underground utilities and structures. Provide temporary services as required to maintain continuous site drainage, plant treatment and operation, (water, control and electrical lines), etc.

B. Demolition, Rehabilitation and Construction of New Facilities:

1. CONTRACTOR shall complete all demolition, construction and rehabilitation work described in the Contract Documents.
2. CONTRACTOR shall complete all startup, testing and training activities required by the Contract Documents.
3. CONTRACTOR shall complete site restoration, site cleanup and demobilization activities.

C. Project Closeout:

1. CONTRACTOR shall complete all final punch list items.
2. CONTRACTOR shall complete project closeout in accordance with Section 01700.
3. Final acceptance of project.
4. Commence warranty period.

1.08 DETAILED SEQUENCE OF CONSTRUCTION AND OPERATIONAL CONSTRAINTS

A. Installation of Vent Pipe at Manhole Nos. 6 and 10:

1. General Requirements:
 - a. The CONTRACTOR shall notify the CITY in writing ten days in advance of any work done.
2. Detailed Sequence of Construction:
 - a. Confirm location of existing utilities
 - b. Survey property and ROW boundaries
 - c. Confirm location and offsets of standpipe base
 - d. Perform maintenance of traffic. Sawcut asphalt, sidewalk and driveway as required
 - e. Excavate and shore work area around manhole and vent pipe trench, .
 - f. Core manhole, install 8" Schedule 80 PVC, butterfly valve, valve box, and grout manhole penetration. Repair PVC liner as necessary. Form and pour concrete pedestal and install vent standpipe.
 - g. Backfill, compact. and restore roadway, driveway and vegetation as required

B. Tyler Street Conflict Box Revision

1. General Requirements:

- a. The CONTRACTOR shall notify the CITY in writing ten days in advance of any work done to the Conflict Box.

2. Detailed Sequence of Construction

- a. Perform maintenance of traffic. Locate existing utilities. Expose, remove, and replace existing sanitary manhole frames and covers on conflict box
- b. Install pipe hangers within storm water section of conflict box
- c. Core drill openings and install interconnecting 4" Schedule 80 PVC vent pipe
- d. Grout all conflict box vent pipe wall penetrations
- e. Install vent pipe within roundabout
- f. Restore affected areas

PART 2 -- PRODUCTS (Not Used)

PART 3 – EXECUTION

3.01 COORDINATION WITH EXISTING UTILITIES AND OTHER AGENCIES

- A. The CONTRACTOR shall notify all utilities including but not limited to FPL, BellSouth, and Comcast Cable in writing with a copy to the CITY/ENGINEER prior to construction commencement. The CONTRACTOR shall cooperate with these utility owners as necessary to minimize service interruptions. The CONTRACTOR shall coordinate with Sunshine One-Call Notification at 1-800-432-4770 a minimum of 48 hours prior to any excavation for location of existing underground facilities.

3.02 COOPERATION

- A. The CONTRACTOR shall allow the CITY or its agents, and other project contractors or their agents, to enter facilities being constructed under this Contract for the purpose of constructing, installing, operating, maintaining, removing, repairing, altering or replacing such equipment pipes, sewers, conduits, manholes, wires, or other structures and appliances which may be required to be installed at or in the Work Area. The CONTRACTOR shall cooperate with all the aforesaid parties and shall allow reasonable provisions for the prosecution of any other work by the CITY, or others, to be done in connection with his work, or in connection with normal use of the facilities.

- END OF SECTION -

SECTION 01530 - PROTECTION OF EXISTING FACILITIES

PART 1 -- GENERAL

1.01 THE REQUIREMENT

- A. The CONTRACTOR shall protect all existing utilities and improvements not designated for removal and shall restore damaged or temporarily relocated utilities and improvements to a condition equal to or better than they were prior to such damage or temporary relocation, all in accordance with requirements of the Contract Documents.
- B. The CONTRACTOR shall verify the exact locations and depths of all utilities shown and the CONTRACTOR shall make exploratory excavations of all utilities that may interfere with the Work. All such exploratory excavations shall be performed as soon as practicable after award of Contract and, in any event, a sufficient time in advance of construction to avoid possible delays to the CONTRACTOR'S Work. When such exploratory excavations show the utility location as shown to be in error, the CONTRACTOR shall so notify the CITY.
- C. The number of exploratory excavations required shall be that number which is sufficient to determine the alignment and grade of the utility.

1.02 RIGHTS-OF-WAY

- A. The CONTRACTOR shall not enter upon any rights-of-way involved until notified that the CITY has secured authority therefore from the proper party. After authority has been obtained, the CONTRACTOR shall give said party due notice of its intention to begin Work, and shall give said party convenient access and opportunity for removing, shoring, supporting, or otherwise protecting utilities or structures within the right-of-way. When two or more contracts are being executed at one time on the same or adjacent land in such manner that Work on one contract may interfere with that on another, the CITY shall determine the sequence and order of the Work.

1.03 PROTECTION OF STREET OR ROADWAY MARKERS

- A. The CONTRACTOR shall not destroy, remove, or otherwise disturb any existing survey markers or other existing street or roadway markers without proper authorization. No pavement breaking or excavation shall be started until all survey or other permanent marker points that will be disturbed by the construction operations have been properly referenced for easy and accurate restoration. It shall be the CONTRACTOR'S responsibility to notify the proper representatives of the CITY of the time and location that Work will be done. Such notification shall be sufficiently in advance of construction so that there will be no delay due to waiting for survey points to be satisfactorily referenced for restoration. All survey markers or points disturbed by the CONTRACTOR without proper authorization by the CITY, will be accurately restored by the CITY at the CONTRACTOR'S expense after all street or roadway resurfacing has been completed.

1.04 RESTORATION OF FACILITIES

- A. General: All paved areas including asphaltic concrete berms cut or damaged during construction shall be replaced with similar materials and of equal thickness to match the existing adjacent undisturbed areas, except where specific resurfacing requirements have been called for in the Contract Documents or in the requirements of the agency issuing the permit. All temporary and permanent pavement shall conform to the requirements of the CITY. All pavements which are subject to partial removal shall be neatly saw cut in straight lines. All paved areas including asphaltic concrete berms cut or damaged during construction shall be replaced with similar materials and of equal thickness to match the existing adjacent undisturbed areas, except where specific restoration requirements have been called for in the Contract Documents or in the requirements of the agency issuing the permit.
- B. Temporary Restoration: Temporary restoration includes repair to all driveways, sidewalks and roadways. They shall be swept clean and be maintained free of dirt and dust. All areas disturbed by the construction activities shall be restored to proper grade, cleaned up, including the removal of debris, trash, and deleterious materials. All construction materials, supplies, or equipment, including piles of debris shall be removed from the area. All temporarily restored areas shall be maintained by the CONTRACTOR. These areas shall be kept clean and neat, free of dust and dirt, until final restoration operations are completed. The CONTRACTOR is responsible to utilize dust abatement operations in the temporarily restored areas as required, to the satisfaction of the ENGINEER.
- C. Temporary Resurfacing: Wherever required by the public authorities having jurisdiction, the CONTRACTOR shall place temporary surfacing promptly after backfilling and shall maintain such surfacing for the period of time fixed by said authorities before proceeding with the final restoration and improvements.
- D. Permanent Resurfacing: In order to obtain a satisfactory junction with adjacent surfaces, the CONTRACTOR shall saw cut back and trim the edge so as to provide a clean, sound, vertical joint before permanent replacement of an excavated or damaged portion of pavement. Damaged edges of pavement along excavations and elsewhere shall be trimmed back by saw cutting in straight lines. All pavement restoration and other facilities restoration shall be constructed to finish grades compatible with adjacent undisturbed pavement, unless otherwise shown on the drawings:
- E. Final Restoration: Final restoration shall include the completion of all required pavement replacement of roadways, driveways, curbs, gutters, sidewalks and other existing improvements disturbed by the construction: final grading, placement of sod, installation or replacement of any trees or shrubs, repair of irrigation systems, pavement marking, etc., all complete and finished, acceptable to the ENGINEER.

1.05 EXISTING UTILITIES AND IMPROVEMENTS

- A. General: The CONTRACTOR shall protect all underground utilities and other improvements which may be impaired during construction operations. It shall be the CONTRACTOR'S responsibility to ascertain the actual location of all existing utilities

and other improvements that will be encountered in its construction operations, and to see that such utilities or other improvements are adequately protected from damage due to such operations.

- B. Where the proper completion of the Work requires the temporary or permanent removal and / or relocation of an existing utility or other improvement which is shown, the CONTRACTOR shall remove and temporarily replace or relocate such utility or improvement in a manner satisfactory to the CITY and the OWNER of the utility/facility. In all cases of such temporary removal or relocation, restoration to former location shall be accomplished by the CONTRACTOR in a manner that will restore or replace the utility or improvement as nearly as possible to its former locations and to as good or better condition than found prior to removal.
- C. CITY'S Right of Access: The right is reserved to the CITY and to the OWNER'S of public utilities and franchises to enter at any time upon any public street, alley, right-of-way, or easement for the purpose of making changes in their property made necessary by the Work of this Contract.
- D. Underground Utilities Shown or Indicated: Existing utility lines that are shown or the locations of which are made known to the CONTRACTOR prior to excavation and that are to be retained, and all utility lines that are constructed during excavation operations shall be protected from damage during excavation and backfilling and, if damaged, shall be immediately repaired by the CONTRACTOR.
- E. Underground Utilities Not Shown or Indicated: In the event that the CONTRACTOR damages any existing utility lines that are not shown or the locations of which are not made known to the CONTRACTOR prior to excavation, a written report thereof shall be made immediately to the CITY. If directed by the CITY, repairs shall be made by the CONTRACTOR under the provisions for changes and extra Work contained in the General Conditions.
- F. Approval of Repairs: All repairs to a damaged improvement are subject to inspection and approval by an authorized representative of the improvement and CITY before being concealed by backfill or other Work.
- G. No fill, excavation material, construction generated debris or equipment shall obstruct water valves, gas meters or sewer manholes. Water, sewer and gas service shall be made accessible to repair or maintenance crews representing the CITY or a privately-owned utility company.
- H. Maintaining in Service: All oil and gasoline pipelines, power, and telephone or other communication cable ducts, gas and water mains, irrigation lines, sewer lines, storm drain lines, poles, and overhead power and communication wires and cables encountered along the line of the Work shall remain continuously in service during all the operations under the Contract, unless other arrangements satisfactory to the CITY are made with the owner of said pipelines, duct, main, irrigation line, sewer, storm drain, pole, or wire or cable. The CONTRACTOR shall be responsible for and shall repair all damage due to its operations, and the provisions of this Section shall not be

abated even in the event such damage occurs after backfilling or is not discovered until after completion of the backfilling.

PART 2 -- PRODUCTS (Not Used)

PART 3 -- EXECUTION (Not Used)

- END OF SECTION -

SECTION 01540 - DEMOLITION AND REMOVAL OF EXISTING STRUCTURES AND
EQUIPMENT

PART 1 -- GENERAL

1.01 THE REQUIREMENT

- A. This Section covers the demolition, removal, and disposal of existing buildings, structures, pavement, curbs, and sidewalk, and any existing equipment including electrical, plumbing, heating and ventilating equipment and piping not required for the operation of the rehabilitated plant as indicated on the Drawings and as specified hereinafter. The CONTRACTOR shall furnish all labor, materials and equipment to demolish buildings and structures and to remove fixtures, anchors, supports, piping and accessories designated to be removed on the Drawings.

1.02 TITLE TO EQUIPMENT AND MATERIALS

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

1.03 CONDITION OF STRUCTURES AND EQUIPMENT

- A. The CITY does not assume responsibility for the actual condition of structures and equipment to be demolished and removed.
- B. Conditions existing at the time of inspection for bidding purposes will be maintained by the CITY so far as practicable.
- C. The information regarding the existing structures and equipment shown on the Drawings is based on visual inspection and a walk-through survey only. Neither the ENGINEER nor the CITY will be responsible for interpretations or conclusions drawn therefrom by the CONTRACTOR.
- D. Prior to the execution of the work, the CONTRACTOR, CITY and ENGINEER shall jointly survey the condition of the adjoining and/or nearby structures. Photographs and records shall be made of any prior settlement or cracking of structures, pavements, and the like, that may become the subject of possible damage claims.

PART 2 – PRODUCTS: (NOT USED)

PART 3 -- EXECUTION

3.01 DEMOLITION AND REMOVALS

- A. The removal of all equipment and piping, and all materials from the demolition of buildings and structure shall, when released by the CITY and ENGINEER, shall be done by the CONTRACTOR and shall become the CONTRACTOR'S property, unless otherwise noted, for disposition in any manner not contrary to the Contract requirements and shall be removed from the site to the CONTRACTOR'S own place of disposal.
- B. The CONTRACTOR shall de-energize all panelboards, lighting fixtures, switches, circuit breakers, electrical conduits, motors, limit switches, pressure switches, instrumentation such as flow, level and/or other meters, wiring, and similar power equipment prior to removal. Any electric panels or equipment which are to be retained shall be relocated or isolated by the CONTRACTOR, prior to the removal of the equipment specified herein.
- C. The CONTRACTOR shall proceed with the removal of the equipment, piping and appurtenances in a sequence designed to maintain the plant in continuous operation as described in Section 01520, Maintenance Facilities and Sequence of Construction, and shall proceed only after approval of the ENGINEER.
- D. Any equipment piping and appurtenances removed without proper authorization, which are necessary for the operation of the existing facilities shall be replaced to the satisfaction of the ENGINEER at no cost to the CITY.
- E. Excavation caused by demolitions shall be backfilled with fill free from rubbish and debris.
- F. Where parts of existing structures are to remain in service, demolish the portions to be removed, repair damage, and leave the structure in proper condition for the intended use. Remove concrete and masonry to the lines designated by drilling, chipping, or other suitable methods. Leave the resulting surfaces reasonably true and even, with sharp straight corners that will result in neat joints with new construction and be satisfactory for the purpose intended. Where existing reinforcing rods are to extend into new construction, remove the concrete so that the reinforcing is clean and undamaged. Cut off other reinforcing 2-inches below the surface and fill with grout flush with the surface.

3.02 PROTECTION

- A. Demolition and removal work shall be performed by competent experienced workmen for the various type of demolition and removal work and shall be carried out through to completion with due regard to the safety of CITY employees, workmen on-site and the public. The work shall be performed with as little nuisance as possible.
- B. The work shall comply with the applicable provisions and recommendation of ANSI A10.2, Safety Code for Building Construction, all governing codes, and as hereinafter specified.
- C. The CONTRACTOR shall make such investigations, explorations and probes as are necessary to ascertain any required protective measures before proceeding with demolition and removal. The CONTRACTOR shall give particular attention to shoring and bracing requirements so as to prevent any damage to new or existing construction.

- D. The CONTRACTOR shall provide, erect, and maintain catch platforms, lights, barriers, weather protection, warning signs and other items as required for proper protection of the public, occupants of the building, workmen engaged in demolition operations, and adjacent construction.
- E. The CONTRACTOR shall provide and maintain weather protection at exterior openings so as to fully protect the interior premises against damage from the elements until such openings are closed by new construction.
- F. The CONTRACTOR shall provide and maintain temporary protection of the existing structure designated to remain where demolition, removal and new work is being done, connections made, materials handled or equipment moved.
- G. The CONTRACTOR shall take necessary precautions to prevent dust from rising by wetting demolished masonry, concrete, plaster and similar debris. Unaltered portions of the existing buildings affected by the operations under this Section shall be protected by dust-proof partitions and other adequate means.
- H. The CONTRACTOR shall provide adequate fire protection in accordance with local Fire Department requirements.
- I. The CONTRACTOR shall not close or obstruct walkways, passageways, or stairways and shall not store or place materials in passageways, stairs or other means of egress. The CONTRACTOR shall conduct operations with minimum traffic interference.
- J. The CONTRACTOR shall be responsible for any damage to the existing structure or contents by reason of the insufficiency of protection provided.

3.03 WORKMANSHIP

- A. The demolition and removal work shall be performed as described in the Contract Documents. The work required shall be done with care, and shall include all required shoring, bracing, etc. The CONTRACTOR shall be responsible for any damage which may be caused by demolition and removal work to any part or parts of existing structures or items designated for reuse or to remain. The CONTRACTOR shall perform patching, restoration and new work in accordance with applicable Technical Sections of the Specifications and in accordance with the details shown on the Drawings. Prior to starting of work, the CONTRACTOR shall provide a detailed description of methods and equipment to be used for each operation and the sequence thereof for review by the ENGINEER.
- B. All supports, pedestals and anchors shall be removed with the equipment and piping unless otherwise specified or required. Concrete bases, anchor bolts and other supports shall be removed to approximately 1-inch below the surrounding finished area and the recesses shall be patched to match the adjacent areas. Superstructure wall and roof openings shall be closed, and damaged surfaces shall be patched to match the adjacent areas, as specified under applicable Sections of these Specifications, as shown on the Drawings, or as directed by the ENGINEER. Wall sleeves and castings shall be plugged or blanked off, all openings in concrete shall be closed in a manner meeting the requirements of the appropriate Sections of these Specifications, as shown on the Drawings, and as directed and approved by the ENGINEER.

- C. Materials or items designated to remain the property of the CITY shall be as hereinafter tabulated. Such items shall be removed with care and stored at a location at the site to be designated by the CITY.
- D. Where equipment is shown or specified to be removed and relocated, the CONTRACTOR shall not proceed with removal of this equipment without specific prior approval of the ENGINEER. Upon approval, and prior to commencing removal operations, the equipment shall be operated in the presence of representatives of the CONTRACTOR, CITY and ENGINEER. Such items shall be removed with care, under the supervision of the trade responsible for reinstallation and protected and stored until required. Material or items damaged during removal shall be replaced with similar new material or item. Any equipment that is removed without proper authorization and is required for plant operation shall be replaced at no cost to the CITY.
- E. Wherever piping is to be removed for disposition, the piping shall be drained by the CONTRACTOR and adjacent pipe and headers that are to remain in service shall be blanked off or plugged and then anchored in an approved manner.
- F. Materials or items demolished and not designated to become the property of the CITY or to be reinstalled shall become the property of the CONTRACTOR and shall be removed from the property and legally disposed of.
- G. The CONTRACTOR shall execute the work in a careful and orderly manner, with the least possible disturbance to the public and to the occupants of the building.
- H. In general, masonry shall be demolished in small sections, and where necessary to prevent collapse of any construction, the CONTRACTOR shall install temporary shores, struts, and bracing.
- I. Where alterations occur, or new and old work join, the CONTRACTOR shall cut, remove, patch, repair or refinish the adjacent surfaces to the extent required by the construction conditions, so as to leave the altered work in as good a condition as existed prior to the start of the work. The materials and workmanship employed in the alterations, unless otherwise shown on the Drawing or specified, shall comply with that of the various respective trades which normally perform the particular items or work.
- J. The CONTRACTOR shall finish adjacent existing surfaces to new work to match the specified finish for new work. The CONTRACTOR shall clean existing surfaces of dirt, grease, loose paint, etc., before refinishing.
- K. The CONTRACTOR shall cut out embedded anchorage and attachment items as required to properly provide for patching and repair of the respective finishes.
- L. The CONTRACTOR shall confine cutting of existing roof areas designated to remain to the limits required for the proper installation of the new work. The CONTRACTOR shall cut and remove insulation, etc., and provide temporary weather tight protection as required until new roofing and flashings are installed.
- M. The CONTRACTOR shall remove temporary work, such as enclosures, signs, guards, and the like when such temporary work is no longer required or when directed at the completion of the work.

3.04 MAINTENANCE

- A. The CONTRACTOR shall maintain the buildings, structures and public properties free from accumulations of waste, debris and rubbish, caused by the demolition and removal operations.
- B. The CONTRACTOR shall provide on-site dump containers for collection of waste materials, debris and rubbish, and he shall wet down dry materials to lay down and prevent blowing dust.
- C. At reasonable intervals during the progress of the demolition and removal work or as directed by the ENGINEER, the CONTRACTOR shall clean the site and properties, and dispose of waste materials, debris and rubbish.

- END OF SECTION -

SECTION 01550 - SITE ACCESS AND STORAGE

PART 1 -- GENERAL

1.01 SITE ACCESS

- A. The CONTRACTOR shall make its own investigation of the condition of available public and private roads and of clearances, restrictions, bridge load limits, and other limitations affecting transportation and ingress and egress to the site of the Work. It shall be the CONTRACTOR's responsibility to construct and maintain any haul roads required for its construction operations.

1.02 STORAGE

- A. No storage of equipment will be allowed in the vicinity of work performed.
- B. Responsibility for protection and safekeeping of equipment and materials will be solely that of the CONTRACTOR, and no claim shall be made against the CITY by reason of any act of an employee or trespasser.
- C. If the CONTRACTOR requires staging and storage, the CONTRACTOR shall obtain such areas from off site sources at no additional cost to the CITY.

PART 2 -- PRODUCTS (Not Used)

PART 3 -- EXECUTION (Not Used)

- END OF SECTION -

SECTION 01560 – TEMPORARY ENVIRONMENTAL CONTROLS

PART 1 -- GENERAL

1.01 CHEMICALS

- A. All chemicals used during project construction or furnished for testing of project operation, whether herbicide, pesticide, disinfectant, polymer, reactant of other classification, will be required to show approval of either EPA or HUD. The handling, use, storage and disposal of such materials, containers or residues shall be in strict conformance with manufacturer and/or CONTRACTOR'S secured storage. Copies of antidote literature and a supply of antidotes shall be kept at the job site office.

1.02 DUST

- A. During all work for this Contract, the CONTRACTOR shall by the application of water and/or calcium chloride or other means, approved by the ENGINEER, eliminate dust annoyance to adjacent property, business establishments and the plant site as specified in Section 00700 - General Conditions. The CONTRACTOR shall take all protective measures, to the satisfaction of the ENGINEER, necessary to ensure that dust and debris does not enter any of the mechanical or electrical equipment. The CONTRACTOR shall be responsible for the cleanup of existing buildings, equipment, controls, etc., which have become soiled due to the lack of proper dust control as determined by the ENGINEER. The CONTRACTOR shall provide daily application of water to all unpaved areas designated by the ENGINEER in the field and to the satisfaction of the ENGINEER in the field.

1.03 NOISE

- A. Noise resulting from the CONTRACTOR'S work shall not violate the Hollywood Code of Ordinance Chapter 100, with specific note to the restrictions of paragraph 100.05 or exceed the noise levels and other requirements stated in the Broward County Chapter 27 Pollution Control, relating to noise abatement in Broward County. The CONTRACTOR shall be responsible for curtailing noise resulting from his operation. He shall, upon written notification from the ENGINEER or the noise control officers, make any repairs, replacements, adjustments, additions and furnish mufflers when necessary to fulfill requirements.

1.04 EROSION ABATEMENT AND WATER POLLUTION

- A. It is imperative that the CONTRACTOR'S dewatering operations not contaminate or disturb the plant environment or properties adjacent to the Work. The CONTRACTOR, shall, therefore, schedule and control his operations to confine all runoff water from disturbed surfaces, water from dewatering and/or from excavation below the ground water table operations that becomes contaminated with lime silt, muck and other deleterious matter, fuels, oils, bitumens, calcium chloride, chemicals and other polluting materials.

- B. The CONTRACTOR shall construct temporary stilling basin(s) of adequate size and provide all necessary temporary materials, operations and controls including, but not limited to, filters, coagulants, screens and other means necessary to attain the required discharge water quality.
- C. The CONTRACTOR shall be responsible for providing, operating and maintaining materials and equipment used for conveying the clear water to the point of discharge. All pollution prevention procedures, materials, equipment and related items shall be operated and maintained until such time as the dewatering operation is discontinued. Upon the removal of the materials, equipment and related items the CONTRACTOR shall restore the area to the condition prior to his commencing work.

1.05 HURRICANE AND STORM WARNINGS

- A. As the schedule for this project coincides, in part, with the recognized South Florida hurricane season, the CONTRACTOR's attention is drawn to the possibility of hurricane conditions, or severe storm conditions, occurring at the job and plant site during the course of Contract work.
- B. Within 30-days of the date of Notice-to-Proceed, the CONTRACTOR shall submit to the ENGINEER and CITY a Hurricane Preparedness Plan. The plan should outline the necessary measures which the CONTRACTOR proposes to perform at no additional cost to the CITY in case of a hurricane warning.
- C. In the event of inclement weather, or whenever the ENGINEER shall direct, the CONTRACTOR shall, and will cause Sub-Contractors to protect carefully the Work and materials against damage or injury by reasons of failure on the part of the CONTRACTOR to so protect the Work. Such Work and materials so damaged shall be removed and replaced at the expense of the CONTRACTOR.
 - 1. Hurricane Watch: Upon designation of a hurricane watch, CONTRACTORS shall be responsible for storing all loose supplies and equipment on the job site that may pose a danger. The CONTRACTOR shall backfill all open holes in preparation of inclement weather. In addition, the CONTRACTOR shall remove all bulkheads and plugs in pipelines that would impede drainage in the case of flooding. Structures that may be in danger of floatation shall be flooded. The CONTRACTOR shall also cooperate with CITY personnel in protecting other structures at the site.
 - 2. Hurricane Warning: No mobile "temporary facility" under the control of the City of Hollywood, or on City property, shall be staffed during a hurricane warning. CONTRACTOR facilities meeting these criteria shall comply.
- D. The CONTRACTOR is advised to take all necessary precautions to protect his equipment by moving it to higher ground if in an area subject to flooding. Known areas of Hollywood that would be subject to flooding from storm tides include:

Hollywood Blvd. North Lake Area		South Lake Area
A1A	Sheridan Street	Dania Beach Blvd.
US Highway 1	46 th Avenue	Hallandale Beach Blvd.

1.06 PESTS AND RODENTS

- A. The CONTRACTOR shall be responsible for maintaining the jobsite free from litter, rubbish and garbage. He shall provide containers for the disposal of garbage and other materials that attract and are breeding places for pests and rodents. The CONTRACTOR shall provide the services of an exterminator to inspect the jobsite on a periodic basis and to provide service as required to control pests and rodents.

1.07 PERIODIC CLEAN-UP; BASIC SITE RESTORATION

- A. During construction, the CONTRACTOR shall regularly remove from the site all accumulated debris and surplus materials of any kind which result from his operations, or whenever the accumulation is in excess of one truck load. Unused equipment and tools shall be stored at the CONTRACTOR'S yard or base of operations for the project.
- B. When the work involves installation of sewers, drains, water mains, manholes, underground structures, or other disturbance of existing features in or across streets, rights-of-way, easements, or private property, the CONTRACTOR shall (as the work progresses) promptly backfill, compact, grade and otherwise restore the disturbed area to a basic condition which will permit resumption of pedestrian or vehicular traffic and any other critical activity or function consistent with the original use of the land. Unsightly mounds of earth, large stones, boulders, and debris shall be removed so that the site presents a neat appearance.
- C. The CONTRACTOR shall perform the clean-up work on a regular basis and as frequently as ordered by the ENGINEER. Basic site restoration in a particular area shall be accomplished immediately following the installation or completion of the required facilities in that area. Furthermore, such work shall also be accomplished, when ordered by the ENGINEER, if partially completed facilities must remain incomplete for some time period due to unforeseen circumstances.
- D. Upon failure of the CONTRACTOR to perform periodic clean-up and basic restoration of the site to the ENGINEER'S satisfaction, the ENGINEER may, upon five (5) days prior written notice to the CONTRACTOR, employ such labor and equipment as he deems necessary for the purpose, and all costs resulting therefrom shall be charged to the CONTRACTOR and deducted from the amounts of money that may be due him.

1.08 SECURITY

- A. The CONTRACTOR shall care for and protect against loss or damage of all material to be incorporated in the construction for the duration of the Contract and shall repair or replace damaged or lost materials and damage to structures.
- B. The CONTRACTOR shall be responsible for providing and maintaining temporary fencing and gates and the daily securing of temporary fencing and gates used for construction purposes for the duration of the project.
- C. The CONTRACTOR shall strictly comply with working hours on the project site. Prior to any work outside of the standard working hours, the CONTRACTOR shall request the CITY's approval via written request (at least 8 hours in advance). The written request shall clearly define the work to be performed, the names of the employees, their

employer and their trade and the hours and days during which the work is planned. The CITY is considering and the CONTRACTOR shall comply with additional security requirements including employee photo identification at all times on-site and employee parking passes.

PART 2 -- PRODUCTS (Not Used)

PART 3 -- EXECUTION (Not Used)

- END OF SECTION -

SECTION 01570 – TRAFFIC REGULATIONS AND MAINTENANCE OF TRAFFIC

PART 1 – GENERAL

1.01 TRAFFIC CONTROL

- A. CONTRACTOR shall obey all traffic laws and comply with all the requirements, rules and regulations of the Florida State Department of Transportation, the City of Hollywood, and other local authorities having jurisdiction, to maintain adequate warning signs, lights, barriers, etc., for the protection of traffic on public roadways and the treatment plant site.
- B. The CONTRACTOR shall maintain traffic and protect the public from all damage to persons and property within the Contract Limits, in accordance with the Contract Documents and all applicable state, city and local regulations. He shall conduct his operations so as to maintain and protect access, for vehicular and pedestrian traffic, to and from all properties and business establishments adjoining or adjacent to those streets affected by his operations, and to subject the public to a minimum of delay and inconvenience.
- C. For the protection of traffic in public or private streets and ways, the CONTRACTOR shall provide, place, and maintain all necessary barricades, traffic cones, warning signs, lights, and other safety devices in accordance with the requirements of the “Manual of Uniform Traffic Control Devices, Part VI – Traffic Controls for Street and Highway Construction and Maintenance Operations”, published by U.S. Department of Transportation, Federal Highway Administration (ANSI D6.1).
- D. All signs, signals, and barricades shall conform to the requirements of Subpart G, Part 1926, of the OSHA Safety and Health Standards for Construction.
- E. The CONTRACTOR shall provide watchmen and flagmen as may be necessary for protection of traffic.
- F. The CONTRACTOR shall remove traffic control devices when no longer needed, repair all damage caused by installation of the devices, and shall remove post settings and backfill the resulting holes to match grade.
- G. All dirt spilled from the CONTRACTOR’S trucks on existing pavements shall be removed by the CONTRACTOR immediately and whenever in the opinion of the ENGINEER the accumulation is sufficient to cause the formation of mud, dust, interference with traffic or create a traffic hazard.

1.02 TEMPORARY CROSSINGS

- A. Street Use: Nothing herein shall be construed to entitle the CONTRACTOR to the exclusive use of any public street, alleyway, or parking area during the performance of Work hereunder, and it shall so conduct its operations as not to interfere unnecessarily with the authorized work of utility companies or other agencies in such streets, alleys, ways, or parking areas. No street shall be closed to the public without first obtaining permission of the CITY and proper governmental authority. Where excavation is being

performed in primary streets or highways, one lane in each direction shall be kept open to traffic at all times unless otherwise provided or shown. Toe boards shall be provided to retain excavated material if required by the CITY or the agency having jurisdiction over the street or highway. Fire hydrants on or adjacent to the Work shall be kept accessible to fire-fighting equipment at all times. Temporary provisions shall be made by the CONTRACTOR to assure the use of sidewalks and the proper functioning of all gutters, sewer inlets, and other drainage facilities.

1.03 CONTRACTOR PARKING

- A. The CONTRACTOR's personnel shall not park on roads or any areas restricted by the ENGINEER in the field. The CONTRACTOR shall be responsible for enforcing on-site parking regulations.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

- END OF SECTION -

SECTION 01590 – FIELD OFFICE, EQUIPMENT AND SERVICES

PART 1 -- GENERAL

1.01 THE REQUIREMENT

- A. The CONTRACTOR is not required to provide a field office. Should the CONTRACTOR elect to provide a field office, the CONTRACTOR is responsible for providing a suitable location for the field office. The CITY will not provide an area for a field office for the work.
- B. If field offices are to be furnished and installed, the CONTRACTOR shall be responsible for providing temporary utilities including power, lighting, heating, cooling, and ventilating, water, sanitary and personnel facilities, telephone service, and fire protection as required.
- C. The CONTRACTOR shall be responsible for providing sufficient area for employee parking at the field office. The CITY will not provide parking area for CONTRACTOR's employee parking.
- D. If applicable, the CONTRACTOR shall prepare and submit all required drawings with sufficient detail as necessary to the City of Hollywood Building Department for permitting of the field office and utility hookups. The CONTRACTOR shall comply with all Building Department requirements accordingly.

PART 2 -- PRODUCTS (Not Used)

PART 3 -- EXECUTION (Not Used)

- END OF SECTION -

SECTION 01600 – EQUIPMENT AND MATERIALS

PART 1 -- GENERAL

1.01 THE REQUIREMENT

- A. The word "Products," as used herein is defined to include purchased items for incorporation into the Work, regardless of whether specifically purchased for project or taken from CONTRACTOR's stock of previously purchased products. The word "Materials," is defined as products which must be substantially cut, shaped, worked, mixed, finished, refined, or otherwise fabricated, processed, installed, or applied to form units of Work. The word "Equipment" is defined as products with operational parts, regardless of whether motorized or manually operated, and particularly including products with service connections (wiring, piping, and other like items). Definitions in this paragraph are not intended to negate the meaning of other terms used in Contract Documents, including "specialties," "systems," "structure," "finishes," "accessories," "furnishings," "special construction," and similar terms, which are self-explanatory and have recognized meanings in the construction industry.
- B. Equipment Specifications may not deal individually with minute items required such as components, parts, controls, and devices which may be required to produce the equipment performance specified or as required to meet the equipment warranties. Where such items are required, they shall be included by the supplier of the equipment, whether or not specifically called for in the Contract Documents.
- C. All equipment, materials, instruments or devices incorporated in this project shall be new and unused, unless indicated otherwise in the Contract Documents. Equipment and materials to be incorporated into the work shall be delivered sufficiently in advance of their installation and use to prevent delay in the execution of the work, and they shall be delivered as nearly as feasible in the order required for executing the work.
- D. Where the words "furnish", "provide", "supply", "replace", or "install" are used, whether singularly or in combination, they shall mean to furnish and install, unless specifically stated otherwise.
- E. In the interest of brevity, the explicit direction "to furnish and install" has sometimes been omitted in specifying materials and/or equipment herein. Unless specifically noted otherwise, it shall be understood that all equipment and/or materials specified or shown on the Drawings shall be furnished and installed under the Contract as designated on the Drawings.

1.02 INSTALLATION OF EQUIPMENT

- A. Equipment and materials shall be installed in accordance with the requirements of the General Conditions, Supplemental Conditions and the respective Specification Sections.
- B. Concrete foundations for equipment shall be of approved design and shall be adequate in size, suitable for the equipment erected thereon, properly reinforced, and tied into floor slabs by means of reinforcing bars or dowels. Foundation bolts of ample size and strength shall be provided and properly positioned by means of suitable templates and secured

during placement of concrete. Foundations shall be built and bolts installed in accordance with the manufacturer's certified drawings.

- C. Before mounting equipment on a foundation, the CONTRACTOR shall clean the top surface; if necessary, rough it with a star chisel and clean again; and clean out all foundation bolt sleeves. The CONTRACTOR shall provide a sufficient number of stainless steel plate shims about 2-inches wide and 4-inches long, and of a varying thickness from 1/8 to 1/2 inch. A combination of these shims shall be placed next to each foundation bolt to bring the bottom of the bedplate or frame about 1/8 inch above the final setting. The equipment shall be lowered by changing the combination of shims. Using stainless steel shim stock of various thicknesses, continue to level the equipment a little at a time and in rotation until it is at the correct elevation in both directions. When the equipment is level, tighten down on the foundation bolts a little at a time in rotation to make certain the equipment remains level and does not shift on the shims. A preliminary alignment check shall be made before grout is placed.
- D. Equipment shall be set, aligned and assembled in conformance with manufacturer's drawings or instructions. Run out tolerances by dial indicator method of alignment shall be plus or minus .002 inches, unless otherwise directed by the CITY.
- E. All blocking and wedging required for the proper support and leveling of equipment during installation shall be furnished by the CONTRACTOR. All temporary supports shall be removed, except stainless steel wedges and shims, which may be left in place with the approval of the CITY.
- F. Each piece of equipment or supporting base, bearing on concrete foundations, shall be bedded in grout. The CONTRACTOR shall provide a minimum of 1-1/2-inch thick grouting under the entire baseplate supporting each pump, motor drive unit and other equipment. Grout shall be non-shrink grout, as specified under Section 03315 entitled "Grout".
- G. When motors are shipped separately from driven equipment, the motors shall be received, stored, meggered once a month, and the reports submitted to the CITY. After driven equipment is set, the motors shall be set, mounted, shimmed, millrighted, coupled and connected complete. Motors shall then be turned once per month and documented by the CONTRACTOR to the CITY.

1.03 CONNECTIONS TO EQUIPMENT

- A. Connections to equipment shall follow manufacturer's recommendations as to size and arrangement of connections and/or as shown in detail on the Drawings or approved Shop Drawings. Piping connections shall be made to permit ready disconnection of equipment with minimum disturbance of adjoining piping and equipment.
- B. The Electrical CONTRACTOR or CONTRACTOR if no electrical contract exists shall be responsible for bringing proper electrical service to each item of equipment requiring electrical service as shown on the Drawings or approved Shop Drawings. Electrical connections to equipment requiring electrical service shall be made by the Electrical CONTRACTOR, unless otherwise indicated on the Drawings or in the Technical Specifications.

- C. The HVAC CONTRACTOR or CONTRACTOR if no HVAC Contract exists shall bring and connect HVAC service to all equipment items requiring same as shown on the Drawings. Electrical connections to equipment requiring electrical service shall be made by the Electrical CONTRACTOR, unless otherwise indicated on the Drawings or in the Technical Specifications.
- D. The Plumbing CONTRACTOR or CONTRACTOR if no plumbing contract exists shall bring and connect plumbing service to all equipment items requiring same as shown on the Drawings.

1.04 IDENTIFICATION TAGS FOR EQUIPMENT AND INSTRUMENTS

- A. All process equipment, pumps, blowers, valves, gates and process instruments that are identified by a tag number on the Process and Instrumentation Diagrams (P&IDs on Instrumentation contract drawings) shall have an identification tag at the device.
- B. The identification tag shall show a unique tag number for the device (e.g., CFP-6010), and the common name of the device (e.g., Centrifuge Feed Pump No. 1).
- C. The identification tag shall be either lamacoid tag with white background and black core letters, or non-corrosive metal tags, ASTM A240 Grade 430 stainless steel with a bright annealed finish.
- D. Characters on identification tags shall be 3/16" high and surface cut deep unless otherwise noted. Characters shall be cut into the lamacoid tags with a hardened steel router bit and into stainless steel tags with a diamond tip cutter.
- E. Identification tags shall be buffed around the perimeter to remove any sharp edges or corners.
- F. Identification tags shall be attached to the equipment item, valve, or instrument with 0.9 mm diameter wire or stainless steel screws.

1.05 PRODUCT DELIVERY-STORAGE-HANDLING

- A. The CONTRACTOR shall deliver, handle, and store products in accordance with supplier's written recommendations and by methods and means which will prevent damage, deterioration, and loss including theft. Delivery schedules shall be controlled to minimize long-term storage of products at site and overcrowding of construction spaces. In particular, the CONTRACTOR shall provide delivery/installation coordination to ensure minimum holding or storage times for products recognized to be flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other sources of loss. Any equipment or materials of whatever kind which may have become damaged or deteriorated from any cause shall be removed and replaced by good and satisfactory items at the CONTRACTOR's expense for both labor and materials.

1.06 TRANSPORTATION AND HANDLING

- A. Products shall be transported by methods to avoid product damage and shall be delivered in undamaged condition in supplier's unopened containers or packaging, dry.

- B. The CONTRACTOR shall provide equipment and personnel to handle products, materials, and equipment including those provided by CITY, by methods to prevent soiling and damage.
- C. The CONTRACTOR shall provide additional protection during handling to prevent marring and otherwise damaging products, packaging, and surrounding surfaces.

1.07 STORAGE AND PROTECTION

- A. The CONTRACTOR shall protect all equipment and materials from deterioration and damage, including provisions for temporary storage buildings as needed and as specified in Section 01550 entitled "Site Access and Storage".
- B. Products shall be stored in accordance with supplier's written instructions, with seals and labels intact and legible. Sensitive products shall be stored in weather-tight enclosures and temperature and humidity ranges shall be maintained within tolerances required by supplier's written instructions.
- C. Storage of equipment and materials shall be in locations completely protected from flooding, standing water, excessive dust, falling rock, brush fire, etc. Storage areas shall be located sufficiently distant from all construction activities and the movement of construction vehicles to minimize the potential for accidental damage.
- D. For exterior storage of fabricated products, they shall be placed on sloped supports above ground. Products subject to deterioration shall be covered with impervious sheet covering; ventilation shall be provided to avoid condensation.
- E. Loose granular materials shall be stored on solid surfaces in a well drained area and shall be prevented from mixing with foreign matter.
- F. Storage shall be arranged to provide access for inspection. The CONTRACTOR shall periodically inspect to assure products are undamaged and are maintained under required conditions.
- G. Storage shall be arranged in a manner to provide access for maintenance of stored items and for inspection.

1.08 MAINTENANCE OF STORAGE

- A. Stored products shall be periodically inspected on a scheduled basis. The CONTRACTOR shall maintain a log of inspections and shall make said log available to the ENGINEER on request.
- B. The CONTRACTOR shall verify that storage facilities comply with supplier's product storage requirements.
- C. The CONTRACTOR shall verify that supplier-required environmental conditions are maintained continually.

- D. The CONTRACTOR shall verify that surfaces of products exposed to the elements are not adversely affected and that any weathering of finishes is acceptable under requirements of Contract Documents.

1.09 MAINTENANCE OF EQUIPMENT STORAGE

- A. For mechanical and electrical equipment in long-term storage, the CONTRACTOR shall provide a copy of the supplier's service instructions to accompany each item, with notice on enclosed instruction shown on exterior of package.
- B. Equipment shall be serviced on a regularly scheduled basis, and a log of services shall be maintained and submitted as a record document to the ENGINEER.

1.10 LUBRICANTS

- A. During testing and prior to acceptance, the CONTRACTOR shall furnish all lubricants necessary for the proper lubrication of all equipment furnished under this Contract.

1.11 SPECIAL TOOLS

- A. For each type of equipment furnished by him, the CONTRACTOR shall provide a complete set of all special tools (including calibration and test equipment) which may be necessary for the adjustment, operation, maintenance and disassembly of such equipment.
- B. Special tools shall be delivered at the same time as the equipment to which they pertain. The CONTRACTOR shall properly store and safeguard such special tools until completion of the Work, at which time they shall be delivered to the CITY.

1.12 PROTECTION AGAINST ELECTROLYSIS

- A. Where dissimilar metals are used in conjunction with each other, suitable insulation shall be provided between adjoining surfaces so as to eliminate direct contact and any resultant electrolysis. The insulation shall be bituminous impregnated felt, heavy bituminous coatings, nonmetallic separators or washers, or other acceptable materials.

1.13 FASTENERS

- A. All necessary bolts, anchor bolts, nuts, washers, plates and bolt sleeves shall be furnished by the CONTRACTOR in accordance herewith. Bolts shall have suitable washers and, where so required, their nuts shall be hexagonal.
- B. All bolts, anchor bolts, nuts, washers, plates, and bolt sleeves shall be Type 316 stainless steel unless otherwise specifically indicated or specified.
- C. Unless otherwise specified, stud, tap, and machine bolts shall be of the best quality refined bar iron. Hexagonal nuts of the same quality of metal as the bolts shall be used.

1.14 EXCAVATED MATERIALS

- A. All excavated materials needed for backfilling operation shall be stored on site. Where additional area is needed for stockpiling, it shall be obtained by the CONTRACTOR.

B. Any excess backfill shall be delivered to the CITY's property as directed by the ENGINEER.

PART 2 -- PRODUCTS

(NOT USED)

PART 3 -- EXECUTION

(NOT USED)

- END OF SECTION -

SECTION 01700 - PROJECT CLOSEOUT

PART 1 -- GENERAL

1.01 PROJECT CLOSEOUT

- A. As construction of the project enters the final stages of completion, the CONTRACTOR shall, in accordance with the requirements set forth in the Contract Documents, attend to or have already completed the following items:
1. Scheduling start-up and initial operation.
 2. Correcting or replacing defective work, including completion of items previously overlooked or work which remains incomplete, all as evidenced by the CITY's "Punch" lists.
 3. Make final submittals.
 4. Attend to any other items listed herein or brought to the CONTRACTOR's attention by the CITY.

1.02 CLOSEOUT TIMETABLE

- A. The CONTRACTOR shall establish dates for equipment testing, acceptance periods, and instructional periods (as required under the Contract). Such dates shall be established not less than one week prior to beginning any of the foregoing items, to allow the CITY, the ENGINEER and their authorized representatives sufficient time to schedule attendance at such activities.

1.03 FINAL SUBMITTALS

- A. Before the acceptance of the project major milestones for substantial completion, the CONTRACTOR shall submit to the ENGINEER (or to the CITY if indicated) certain records, certifications, etc., which are specified elsewhere in the Contract Documents. Missing, incomplete or unacceptable items, as determined by the ENGINEER, shall indicate non-compliance with substantial completion major milestone dates. A partial list of such items appears below, but it shall be the CONTRACTOR'S responsibility to submit any other items which are required in the Contract Documents:
1. Written Test results of project components.
 2. Performance affidavits for equipment.
 3. Operation and Maintenance Manuals for equipment.
 4. Record Drawings: During the entire construction operation, the CONTRACTOR shall maintain records of all deviations from the Drawings and Specifications and shall prepare record drawings showing correctly and accurately all changes and

deviations from the Work made during construction to reflect the Work as it was actually constructed. These drawings shall conform to recognized standards of drafting, shall be neat, legible and on mylar or other reproducible material acceptable to the ENGINEER.

5. Written guarantees, where required.
6. Certificates of inspection and acceptance by local governing agencies having jurisdiction.
7. Releases from all parties who are entitled to claims against the subject project, property, or improvement pursuant to the provisions of law.

1.04 PUNCH LISTS

- A. Final cleaning and repairing shall be scheduled upon completion of the project.
- B. The ENGINEER will make his final inspection whenever the CONTRACTOR has notified the ENGINEER that the work is ready for the inspection. Any work not found acceptable and requiring cleaning, repair and/or replacement will be noted on the "Punch" list. Work that has been inspected and accepted by the ENGINEER shall be maintained by the CONTRACTOR, until final acceptance of the entire project.
- C. Whenever the CONTRACTOR has completed the items on the punch list, he shall again notify the ENGINEER that it is ready for final inspection. This procedure will continue until the entire project is accepted by the ENGINEER. The "Final Payment" will not be processed until the entire project has been accepted by the ENGINEER and all of the requirements in previous Article 1.03 "Final Submittals" have been satisfied.

1.05 MAINTENANCE AND GUARANTEE

- A. The CONTRACTOR shall comply with all maintenance and guarantee requirements of the Contract Documents.
- B. Replacement of earth fill or backfill, where it has settled below the required finish elevations, shall be considered as a part of such required repair work, and any repair or resurfacing constructed by the CONTRACTOR which becomes necessary by reason of such settlement shall likewise be considered as a part of such required repair work unless the CONTRACTOR shall have obtained a statement in writing from the affected private CITY or public agency releasing the CITY from further responsibility in connection with such repair or resurfacing.
- C. The CONTRACTOR shall make all repairs and replacements promptly upon receipt of written order from the CITY. If the CONTRACTOR fails to make such repairs or replacements promptly, the CITY reserves the right to do the Work and the CONTRACTOR and his surety shall be liable to the CITY for the cost thereof.

1.06 TOUCH-UP AND REPAIR

- A. The CONTRACTOR shall touch-up and repair damage to all field painted and factory finished equipment. Touch-up of equipment panels, etc., shall match as nearly as possible the original finish. If in the opinion of the ENGINEER the touch-up work is not satisfactory, the CONTRACTOR shall repaint the item. CONTRACTOR shall also furnish additional paint as defined in Section 09900.

1.07 FINAL CLEANUP

- A. The CONTRACTOR shall promptly remove from the vicinity of the completed Work, all rubbish, unused materials, concrete forms, construction equipment, and temporary structures and facilities used during construction. Final acceptance of the Work by the CITY will be withheld until the CONTRACTOR has satisfactorily complied with the foregoing requirements for final cleanup of the project site.

PART 2 -- PRODUCTS (Not Used)

PART 3 -- EXECUTION (Not Used)

- END OF SECTION -

DIVISION 2 – SITE WORK

SECTION 02050 - DEMOLITION

PART 1 -- GENERAL

1.01 THE REQUIREMENT

- A. The CONTRACTOR shall remove and dispose of or salvage any existing structure, piping, conduits, electrical equipment, mechanical equipment, or appurtenances or portions thereof, as shown on the Drawings or required to complete the project.
- B. All materials designated for disposal shall, when released by the ENGINEER, become the CONTRACTOR's property and shall be removed from the site and disposed of by the CONTRACTOR.
- C. All materials designated to be salvaged shall be carefully removed and moved to a city-designated location within the City of Hollywood.

1.02 SUBMITTALS

- A. The CONTRACTOR shall submit for review, in accordance with Section entitled "Submittals" the proposed methods, equipment and operation sequence. Include coordination for shut-off, temporary services, continuation of service and other applicable items to ensure no interruption of operations except as herein before specified.

1.03 JOB CONDITIONS

- A. Protection: The CONTRACTOR shall execute the demolition and removal work to prevent damage or injury to structures, occupants thereof and adjacent features which might result from falling debris or other causes, and so as not to interfere with the use, and free and safe passage to and from adjacent structures.
- B. Use of Explosives: The use of explosives is strictly prohibited on this project
- C. Closing or obstructing of roadways adjacent to the work by the placement or storage of materials will not be permitted. All operations shall be conducted with a minimum interference to traffic on these ways.
- D. The CONTRACTOR shall repair damage done to facilities to remain, or any property belonging to the CITY.
- E. Scheduling: The CONTRACTOR shall carry out his operations so as to avoid interference with operations and work in the existing facilities.
- F. Notification: At least 48 hours prior to commencement of a demolition or removal, the CONTRACTOR shall notify the CITY in writing of his proposed removal schedule. No removals shall be started until the schedule is acceptable to the CITY.

1.04 PRE-DEMOLITION ASBESTOS SURVEY – NOT REQUIRED

- A. The CONTRACTOR is responsible for performing a Pre-Demolition Asbestos survey prior to the commencement of demolition activities at the site. This survey must be completed by a Florida licensed Asbestos Consultant. A copy of the survey shall be provided to the ENGINEER and CITY for informational purposes only.
- B. The CONTRACTOR is required to procure all permits related to demolition prior to the commencement of demolition activities at the site.

1.05 DUST CONTROL

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

PART 2 – PRODUCTS

(NOT USED)

PART 3 -- EXECUTION

3.01 GENERAL

- A. Prior to commencing work, the CONTRACTOR shall check all underground and exposed existing utility and process piping and all equipment in any way associated or in the proximity to the items to be removed and shall verify that the piping is inactive (abandoned) and that electric power to equipment, lighting, controls, etc., has been permanently disconnected. Active services shall be brought to the attention of the CITY for proper action.
- B. The CONTRACTOR shall remove all equipment and accessories in a workmanlike manner and shall take all necessary precautions to avoid damaging existing equipment, piping, and structure which are to be retained. Damages shall be repaired or replaced at the expense of the CONTRACTOR.
- C. The CONTRACTOR shall proceed with the removal of the structures, equipment, piping, and appurtenances in a sequence designed to maintain the facilities in continuous operation.
- D. All supports, pedestals, and anchors shall be removed with the equipment structures and piping unless otherwise specified or required. Concrete bases, anchor bolts, and other supports shall be removed in their entirety; and the recesses shall be patched to match the adjacent areas. Superstructure wall and roof openings shall be closed; damaged surfaces shall be patched to match the adjacent areas, as specified under applicable sections of these Specifications, and as shown on the Drawings, or as indicated by the ENGINEER. Wall sleeves and castings shall be cleared of extraneous materials and filled with non-shrink grout as recommended by manufacturer for watertightness required. All openings in concrete shall be closed in a manner meeting the

requirements of the appropriate sections of these Specifications, as shown on the Drawings, and as acceptable to the ENGINEER.

3.02 UNAUTHORIZED REMOVAL

- A. Any equipment, piping, and appurtenances removed without proper authorization, shall be replaced to the satisfaction of the ENGINEER at no cost to the CITY.

3.03 SALVAGED ITEMS

- A. Items to be salvaged as shown on the plans shall be tagged and shall remain the property of the CITY. The CONTRACTOR shall carefully move salvaged equipment to a CITY-designated location at the Southern Regional Wastewater Treatment Plant. Items to be salvaged include:

1. Existing variable frequency drives for RAS pumps, typical of three
2. Existing RAS pumps and motors
3. Square D manufactured sections of Motor Control Center
4. Transformers
5. All other metal materials

3.04 DEMOLITION

- A. All materials and equipment shown on the Drawings to be removed or demolished shall become the property of the CONTRACTOR, with the exception of items tagged to be salvaged and metal items tagged for recycling. Prior to removal of any existing equipment or piping from the site of work, the CONTRACTOR shall ascertain from the ENGINEER whether or not the particular item or items are to be salvaged or recycled. The CONTRACTOR shall dispose of all demolition materials, equipment, debris and all other items off the project site and in conformance with all existing applicable laws and regulations.

3.05 STRUCTURAL REMOVALS

- A. The CONTRACTOR shall remove structures to the lines and grades shown, unless otherwise indicated by the ENGINEER.
- B. All wood, concrete, brick, tile, concrete block, roofing materials, reinforcement, structural or miscellaneous metals, plaster, wire mesh and other items contained in or upon the structure shall be removed and taken from the project site. These items shall not be used in backfill.
- C. Finishes: After removal of parts or all of masonry walls, slabs and like work, which tie into new work or existing work, the point of junction shall be neatly repaired so as to leave only finished edges and surface exposed. The jambs, sills and heads of any new windows, passageways, doors or other openings cut into the new work or existing work shall be dressed with new masonry, concrete or metal to provide a smooth, finished appearance.

- D. Anchoring: Where new anchoring materials, including bolts, nuts, hangers, welds and reinforcing steel, are required to attach new work to the existing work, they shall be included under this Section, except where specified elsewhere.

3.06 MECHANICAL REMOVALS

- A. General: Mechanical removals shall consist of dismantling and removing of existing piping, equipment and other appurtenances as shown or required for the completion of the work. It shall include cutting, capping and plugging as required.
- B. Wherever piping is to be removed, adjacent pipe headers that are to remain in service shall be blanked off or plugged and then anchored in an acceptable manner.

3.07 ELECTRICAL REMOVALS

- A. General: Electrical removals shall consist of the removal of conduits and wires, and miscellaneous electrical equipment all as shown, specified or required to perform the work. All existing electrical equipment to be removed shall be removed with such care as maybe required to prevent unnecessary damage, to keep existing systems in operation and to keep the integrity of the grounding systems.

3.08 REPAIR WORK

- A. Certain areas of existing structures, piping, conduits, and the like will be affected by work necessary to complete modifications under this Contract. The CONTRACTOR shall be responsible to rehabilitate those areas affected by its construction activities.
- B. Where new rectangular openings are to be installed in concrete or concrete masonry walls or floors, the CONTRACTOR shall score the edges of each opening (both sides of wall or elevated slab) by saw cutting clean straight lines to a minimum depth of one inch and then chipping out the concrete. Alternately, the opening can be formed by saw cutting completely through the slab or wall. Saw cuts deeper than one inch (or the depth of cover over existing reinforcing steel, whichever is less) shall not be allowed to extend beyond the limits of the opening. Corners shall be made square and true by a combination of core drilling, chipping, or grinding. All necessary precautions shall be taken during removal of concrete to prevent debris from falling and damaging adjacent equipment or piping. Saw cuts allowed to extend beyond the opening shall be repaired by filling with nonshrink grout. The concrete around any exposed reinforcement steel shall be chipped back and exposed reinforcement steel cut a minimum of 1-1/2 inches from the finished face of the new opening. The inside face of the new opening shall be grouted to fill any voids and cover the exposed aggregate and shall be trowel-finished to provide a plumb and square opening.
- C. Where new conduit or piping is to be installed through existing concrete walls, the CONTRACTOR shall accurately position and core-drill openings. Openings shall be adequately sized to allow alignment of piping or conduit and fittings without deflection and to provide adequate clearance for satisfactory packing in the annular space between the piping or conduit and the core drilling opening as shown on the Drawings.
- D. Where new piping is to be connected to existing piping, the existing piping shall be cut square and the ends properly prepared for the connection shown on the drawings. Any

damage to the lining and coating of the existing piping shall be repaired by the CONTRACTOR.

- E. Where existing equipment, equipment pads and bases, piping, piping supports, handrail, electrical panels and devices, conduits, and associated appurtenances are removed, the CONTRACTOR shall rehabilitate the affected area such that little or no evidence of the previous installation remains. Openings in concrete floors, walls, and ceiling from piping, conduit, fastener penetrations, etc., shall be filled with nonshrink grout and finished to match the adjacent area. Concrete pads and bases for equipment and supports shall be removed by chipping away concrete and cutting any exposed reinforced steel and anchor bolts a minimum of 1-1/2 inches below finished grade. The area of concrete to be rehabilitated shall be scored by saw cutting clean, straight lines to a minimum depth of 1-1/2 inches, and all concrete within the scored lines removed to a minimum depth of 1-1/2 inches. The area within the scored lines shall be patched with nonshrink grout to match the adjacent grade and finish. Unless otherwise shown, abandoned connections to piping and conduits shall be terminated with blind flanges, caps, and plugs suited for the material, type, and service of the pipe or conduit. Walls shall be painted in accordance with requirements set forth in Section 09900 entitled "Painting".
- F. Where existing structural steel members are removed or modified, the surface of the remaining existing steel members damaged by construction activities shall be repaired. The affected areas shall be surface prepared and coated in accordance with Section 09900 entitled "Painting".
- G. Disposal of Debris
 - 1. All debris, materials, piping, and miscellaneous waste products from the work described in this section shall be removed from the project as soon as possible. They shall be disposed of in accordance with applicable federal, state, and local regulations. The CONTRACTOR is responsible for determining these regulations and shall bear all costs or retain any profit associated with disposal of these items.

3.09 CLEANUP

- A. The CONTRACTOR shall remove from the project site all debris resulting from the demolition and removal operations as it accumulates. Upon completion of the demolition work, all materials, equipment, waste and debris of every sort shall be removed and the premises shall be left clean, neat and orderly.

- END OF SECTION -

SECTION 02210 - SITE GRADING

PART 1 -- GENERAL

1.01 WORK INCLUDED

- A. The CONTRACTOR shall perform grading Work within the limits, elevations and grades indicated on the Drawings and as specified herein.

1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Excavation and Backfill for Utilities
- B. Concrete Pavement, Curb and Sidewalks

1.03 QUALITY CONTROL

- A. The site shall be graded to the required elevations. Spot elevations are shown on the Drawings and the finished surfaces shall be uniformly sloped between these locations.
- B. Suitable excavated material shall be used in the formation of embankments as shown on the Drawings. The CONTRACTOR shall provide all additional fill material required to complete the embankments.

PART 2 -- PRODUCTS

2.01 FILL

- A. Fill used for site grading shall be noncohesive, nonplastic, granular mixture of local sand and limerock, shall be free from vegetation, organic material or muck and shall contain not more than 8 percent material by weight which passes the No. 200 sieve. Broken concrete shall not be used in the fill. Fill material containing limerock shall have sufficient sand to fill the voids in the limerock, and no individual rocks or pieces of hard material that will not pass a 6-inch diameter ring shall be used in the fill; except that the upper 4-inches of all backfill or fills shall not contain any rock or hard material that will not pass a 3-inch diameter ring. All fill material shall be provided by the CONTRACTOR from any excess suitable on-site material or from off site sources, all subject to review and acceptance by the ENGINEER prior to use. The CONTRACTOR shall be responsible for determining the volume of material required for the site.

PART 3 -- EXECUTION

3.01 PREPARATION

- A. CONTRACTOR shall establish and identify required lines, levels, contours, and datum.
- B. Benchmarks, monuments, and other reference points shall be maintained and re-established if disturbed at no cost to the CITY.

- C. Before the start of grading, CONTRACTOR shall establish the location and extent of utilities in the work area. CONTRACTOR shall notify utilities to remove and relocate lines which are in the way of construction.
- D. CONTRACTOR shall maintain, protect, reroute, or extend as required the utilities which are to remain in the work area.

3.02 REMOVAL OF TOPSOIL

- A. CONTRACTOR shall strip topsoil of horticultural value from areas of construction and stockpile said material separately from fill material.
- B. Topsoil shall not be mixed with subsoil.
- C. Topsoil shall not be stripped when wet.
- D. Heavy equipment shall not be driven over stockpiled topsoil.

3.03 GRADING AND COMPACTION

- A. Fill material shall be placed in lifts not to exceed 8-inches and compacted to a density of not less than 95 percent of maximum density at optimum moisture as determined by ASTM D 1557. Fill material shall be within plus or minus 2 percentage points of optimum moisture content. The minimum density acceptable at any location within the pavement subgrade shall be as specified in Section 02510 – Asphaltic Concrete Pavement.

3.04 FINE GRADING

- A. After structures, bases and pavements are completed and the yard piping trenches backfilled, the disturbed areas of the site shall be fine graded. All construction debris, regardless of size, shall be removed. The completed surface shall be shaped and sloped to drain away from the structures. The completed surface shall be within 0.1 foot of the elevations shown on the Drawings, unless otherwise accepted by the ENGINEER. Minor adjustments to line and grade may be required as the Work progresses in order to satisfy field conditions.

3.05 SURPLUS MATERIAL

- A. CONTRACTOR shall remove and dispose of surplus materials at no cost to CITY.

- END OF SECTION -

SECTION 02222 - EXCAVATION AND BACKFILL FOR UTILITIES

PART 1 -- GENERAL

1.01 THE REQUIREMENT

- A. Excavate, grade and backfill as required for underground piping systems and appurtenances as shown on the Drawings and specified herein.

1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Piping

1.03 REFERENCE SPECIFICATIONS, CODES, AND STANDARDS

- A. Codes: All codes, as referenced herein, are specified in Section 01090, "Reference Standards".

- B. Commercial Standards:

ASTM D 422	Method for Particle-Size Analysis of Soils.
ASTM D 698	Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft·lbf/ft ³ (600 kN·m/m ³
ASTM D 1556	Test Method for Density and Unit Weight of Soil in Place by the Sand-Cone Method.
ASTM D 1557	Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft·lbf/ft ³ (2,700 kN·m/m ³
ASTM D 2419	Test Method for Sand Equivalent Value of Soils and Fine Aggregate.
ASTM D 2922	Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).

1.04 SUBMITTALS

- A. General: Submit information and samples to the CITY for review as specified herein in accordance with the Section entitled "Submittals".
- B. Dewatering: The CONTRACTOR shall submit to the CITY its proposed methods of handling trench water and the locations at which the water will be disposed of. Methods shall be acceptable to the CITY before starting the excavation.
- C. Bedding and Backfill Materials: The CONTRACTOR shall notify the CITY of the off-site sources of bedding and backfill materials.

1. Submit to the CITY a representative sample weighing approximately 25 lbs. The sample shall be delivered to a location at the work site determined by the CITY.
 2. The CONTRACTOR shall notify the CITY in writing of the sources of each material at least ten calendar days prior to the anticipated use of the materials.
- D. Sheeting System: Drawings of the sheeting system and design computations shall be submitted to the CITY; however, the review of these drawings shall in no way relieve the CONTRACTOR of the responsibility to provide a safe and satisfactory sheeting and shoring system. Sheeting and shoring shall be designed by the CONTRACTOR, and the proposed design shall be sealed by a Professional Engineer registered in the State of Florida. If the CITY is of the opinion that at any point sufficient or proper supports have not been provided, it may order additional supports put in at the CONTRACTOR's expense.
- E. Dewatering Permits: If the quantity or nature of water withdrawn requires approval/permits from regulatory agencies, the CONTRACTOR shall procure such permits at its expense and submit copies to the CITY before commencing the work.

1.05 QUALITY CONTROL

- A. An independent testing laboratory will be retained by the CITY to do appropriate testing as described in Section 01400, "Testing and Inspection". The CONTRACTOR shall schedule its work so as to permit a reasonable time for testing before placing succeeding lifts and shall keep the laboratory informed of his progress. A minimum of 48 hours of notice shall be provided to the testing laboratory to mobilize its activities.

1.06 SUBSURFACE INFORMATION

- A. Separate geotechnical reports are available upon request. No part of these reports shall be construed as requirements of the Contract.
- B. The CITY will not assume responsibility for variations of sub-soil quality or conditions at locations other than places shown and at the time the geotechnical investigations were made. The CONTRACTOR shall examine the site and review the available geotechnical reports or undertake its own subsurface investigation prior to submitting its bid, taking into consideration all conditions that may affect its work.

1.07 GROUNDWATER

- A. The CONTRACTOR shall be responsible for anticipating groundwater conditions and shall provide positive control measures as required. Such measures shall ensure stability of excavations, groundwater pressure control, prevention of tanks, pipes, and other structures from being lifted by hydrostatic pressures, and avoiding the disturbance of subgrade bearing materials.
- B. The CONTRACTOR shall be responsible for obtaining all permits required for dewatering operations.

1.07 TRENCH SAFETY ACT COMPLIANCE

- A. The CONTRACTOR by signing and executing the contract is, in writing, assuring that it will perform any trench excavation in accordance with the Florida Trench Safety Act, Section 553.60 et. seq.. The CONTRACTOR has further identified the separate item(s) of cost of compliance with the applicable trench safety standards as well as the method of compliance as noted in the Contract front-end documents.
- B. The CONTRACTOR acknowledges that this cost is included in the applicable items of the Proposal and Contract and in the Grand Total Bid and Contract Price.
- C. The CONTRACTOR is, and the CITY is not, responsible to review or assess the CONTRACTOR's safety precautions, programs or costs, or the means, methods, techniques or technique adequacy, reasonableness of cost, sequences or procedures of any safety precaution, program or cost, including but not limited to, compliance with any and all requirements of Florida Statute Section 553.60 et. seq. cited as the "Trench Safety Act". The CONTRACTOR is, and the CITY is not, responsible to determine if any safety or safety related standards apply to the project, including but not limited to, the "Trench Safety Act".

1.08 PROTECTION OF PROPERTY AND STRUCTURES

- A. The CONTRACTOR shall, at its own expense, sustain in place and protect from direct or indirect injury, all pipes, poles, conduits, walls, buildings, and all other structures, utilities, and property in the vicinity of its Work. Such sustaining shall be done by the CONTRACTOR. The CONTRACTOR shall take all risks attending the presence or proximity of pipes, poles, conduits, walls, buildings, and all other structures, utilities, and its Work. It shall be responsible for all damage, and assume all expenses, for direct or indirect injury and damage, caused by its Work, to any such pipe, structures, etc., or to any person or property, by reason of injury to them, whether or not such structures, etc., are shown on the Drawings.
- B. Barriers shall be placed at each end of all excavations and at such places as may be necessary along excavations to warn all pedestrian and vehicular traffic of such excavations. Barricades with flashing lights shall also be placed along excavation from sunset each day to sunrise of the next day until such excavation is entirely refilled, compacted, and paved. All excavations shall be barricaded where required to meet OSHA, local and Federal Code requirements, in such a manner to prevent persons from falling or walking into any excavation within the site fenced property limits.

PART 2 -- PRODUCTS

2.01 MATERIALS

- A. General: Materials shall be furnished as required from on-site excavations or from acceptable off-site sources as required. The CONTRACTOR shall notify the CITY in writing of the sources of each material at least ten calendar days prior to the anticipated use of the materials.

2.02 BEDDING

- A. Pipe Bedding: In general, clean sandy materials excavated from the utility trench, that is free from organics, clay and construction debris, can be used as pipe bedding when construction is in a dry condition and when the bedding is not sided by muck. Pipe bedding material shall be able to pass through a 3/4-inch sieve. Separation of suitable material for pipe bedding from other material shall be made during the excavation.
- B. Sand shall be used for all copper and other service lines.
- C. In the case of a “dry” installation, sand shall be used for PVC and ductile iron pipe where the bottom of the trench is located in the limestone zone.
- D. In the case of a “wet” installation, pearock shall be used for PVC and ductile iron pipe where the bottom of the trench is located in the limestone zone.
- E. Precast concrete items shall use crushed stone.

2.03 PEAROCK

- A. Pearock shall consist of hard, durable particles of proper size and gradation, and shall be free from organic material, wood, trash, sand, loam, clay, excess fines, and other deleterious materials. Pearock shall conform to the requirements of ASTM C 33, Size Number 8, graded within the following limits:

<u>Sieve Size</u>	<u>Percent Finer by Weight</u>
1/2 inch	100
3/8 inch	85 to 100
No. 4	10 to 30
No. 8	0 to 10
No. 16	0 to 5

2.04 CRUSHED STONE (3/4-INCH ROCK)

- A. Crushed stone shall consist of hard, durable, subangular particles of proper size and gradation, and shall be free from organic material, wood, trash, sand, loam, clay, excess fines, and other deleterious materials. Crushed stone shall conform to the requirements of ASTM C 33, Size Number 57, graded within the following limits:

<u>Sieve Size</u>	<u>Percent Finer by Weight</u>
1 1/2 inch	100
1 inch	95 to 100
1/2 inch	25 to 60
No. 4	0 to 10
No. 8	0 to 5

2.05 SAND

- A. Sand shall be used for bedding polyvinyl chloride, fiberglass, HDPE and other plastic pipe when installed under dry trench conditions unless indicated otherwise on the Drawings. Sand shall be graded sand with 100 percent passing a 3/8-inch sieve and not more than 5 percent passing a No. 200 sieve.

2.06 SELECT BACKFILL

- A. Select Backfill: It is the intent of these specifications to obtain clean sandy material passing through a 3/4-inch sieve as select backfill material for utility and structural applications.
- B. At locations where subsurface preparations for structures have been performed under this or other previous construction contracts, clean excavated material (structural fill) may be used as select backfill. Any excess fill shall be disposed of off-site by the CONTRACTOR.

2.07 GENERAL BACKFILL

- A. General backfill (for grading applications) or "fill" shall be placed above the select backfill. General backfill shall be as specified in Section 02210 – Site Grading.
- B. General backfill used under roadways shall be compatible with the materials and compaction specified under the Sections entitled "Asphaltic Concrete Pavement" and "Concrete Pavement, Curbs and Sidewalks".

PART 3 -- EXECUTION

3.01 EXCAVATION

- A. The CONTRACTOR shall perform all excavation of every description and of whatever substance encountered, to the dimensions, grades and depths shown on the Drawings, or as required for a proper installation. All excavations shall be made by open cut in accordance with the Trench Safety Act, except where noted otherwise on the Drawings. All existing utilities such as pipes, poles and structures shall be carefully located, supported and protected from injury; in case of damage, they shall be restored at the CONTRACTOR's expense.
- B. Pipe trenches for piping shall be excavated to a width within the limits of the top of the pipe and the trench bottom so as to provide a clearance on each side of the pipe barrel, measured to the face of the excavation, or sheeting if used, of 8 inches to 12 inches. Where the pipe size exceeds 12 inches, the clearance shall be from 12 inches to 18 inches unless otherwise indicated on the Drawings. All pipe trenches shall be excavated to a level where suitable material is reached, a minimum of 8 inches below the excavated depth that will allow for a minimum of 36-inches of covering unless otherwise indicated on the Drawings. Excavation depths in other types of materials and conditions shall be made as hereinafter specified.

- C. In areas where trench widths are not limited by right-of-way and/or easement widths, property line restrictions, existing adjacent improvements, including pavements, structures and other utilities, and maintenance of traffic, the trench sides may be sloped to a stable angle of repose of the excavated material but only from a point one foot above the crown of the pipe. A substantially and safely constructed movable shield, "box" or "mule" may be used in place of sheeting when the trench is opened immediately ahead of the shield and closed immediately behind the shield as pipe laying proceeds inside the shield.
- D. Ladders or steps shall be provided for and used by Workmen to enter and leave trenches, in accordance with OSHA requirements.
- E. Excavation for appurtenances shall be sufficient to provide a clearance between their outer surfaces and the face of the excavation or sheeting, if used, of not less than 12 inches.
- F. Excavated unsuitable material shall be removed from the site and disposed of by the CONTRACTOR. Materials removed from the trenches shall be stored in such a manner that will not interfere unduly with any on-site operations, traffic on public roadways and sidewalks and shall not be placed on private property. In congested areas, such materials which cannot be stored adjacent to the trench or used immediately as backfill shall be removed to other convenient places of storage acceptable to the CITY at the CONTRACTOR's expense.
- G. Excavated material that is suitable for use as backfill shall be used in areas where sufficient material is not available from the excavation. Suitable material in excess of backfill requirements shall be either used on the site as directed by the CITY or disposed of by the CONTRACTOR.
- H. Barriers shall be placed at excavations in accordance with OSHA requirements.

3.02 SHEETING AND BRACING

- A. The CONTRACTOR shall furnish, place and maintain sheeting and bracing to support sides of the excavation as necessary to provide safe working conditions in accordance with OSHA requirements, and to protect pipes, structures and other Work from possible damage. Where wood sheeting or certain designs of steel sheeting are used, the sheeting shall be cut off at a level of 2 feet above the top of the installed pipe and that portion below the level shall be left in place. If interlocking steel sheeting is used, it may be removed providing removal can be accomplished without disturbing the bedding, pipe or alignment of the pipe. Any damage to the pipe bedding, pipe or alignment of the constructed utility caused by the removal of sheeting shall be cause for rejection of the affected portion of the work. The CITY may permit sheeting to be left in place at the request and expense of the CONTRACTOR, or the CITY may order him in writing to leave in place, for the preventing of damage to structures or property. Payment for sheeting ordered to remain in place shall be paid for at a negotiated price.
- B. If the CITY is of the opinion that at any point sufficient or proper supports have not been provided, he may order additional supports put in at the CONTRACTOR's expense. The CONTRACTOR shall be responsible for the adequacy of all sheeting used and for

all damage resulting from sheeting and bracing failure or from placing, maintaining and removing it.

3.03 REMOVAL OF WATER

- A. General: It is a basic requirement of these Specifications unless otherwise authorized per Article 3.10 that excavations shall be free from water before pipe or structures are installed.
- B. The CONTRACTOR shall provide pumps, and other appurtenant equipment necessary to remove and maintain water at such a level as to permit construction in a dry condition. The CONTRACTOR shall continue dewatering operations until backfilling has progressed to a sufficient depth over the pipe to prevent flotation or movement of the pipe in the trench or so that it is above the water table. If at any point during the dewatering operation it is determined that fine material is being removed from the excavation sidewalls, the dewatering operation shall be stopped. If any of the subgrade or underlying material is disturbed by movement of groundwater, surface water, or any other reason, it shall be replaced at the CONTRACTOR's expense with crushed stone or gravel.
- C. The CONTRACTOR shall use dewatering systems that include automatic starting devices, and standby pumps that will ensure continuous dewatering in the event of an outage of one or more pumps.
- D. Disposal: Water from the trenches and excavation shall be disposed of in such a manner as will not cause injury to public health, to public or private property, to the Work completed or in progress, to the surface of the streets, cause any interference with the use of the same by the public, or cause pollution of any waterway or stream. The CONTRACTOR shall submit his proposed methods of handling trench water and locations at which the water will be disposed of to the CITY for review and shall receive acceptance before starting the excavation. Disposal to any surface water body will require silt screens to prevent any degradation in the water body. The CONTRACTOR shall have responsibility for acquiring all necessary permits for disposal.

3.04 TRENCH STABILIZATION

- A. No claim for extras, or additional payment will be considered for cost incurred in the stabilization of trench bottoms which are rendered soft or unstable as a result of construction methods, such as improper or inadequate sheeting, dewatering or other causes. In no event shall pipe be installed when such conditions exist and the CONTRACTOR shall correct such conditions so as to provide proper bedding or foundations for the proposed installation at no additional cost to the CITY before placing the pipe or structures.

3.05 PIPE BEDDING

- A. Pipe trenches shall be excavated as described in Article 3.01. The resulting excavation shall be backfilled with acceptable pipe bedding material, up to the level of the centerline of the proposed pipe barrel. This backfill shall be tamped and compacted to provide a proper bedding for the pipe and shall then be shaped to receive the pipe.

Bedding shall be provided under the branch of all fittings to furnish adequate support and bearing under the fitting.

- B. Any over excavation below the levels required for installation of the pipe shall be backfilled with acceptable bedding material, tamped, compacted and shaped to provide proper support for the proposed pipe, at the CONTRACTOR's expense.

3.06 BACKFILL

- A. Pipeline trenches shall be backfilled to a level 12 inches above the top of the pipe with select backfill. When placed in the dry, such material shall be placed in 6-inch layers, each compacted to the densities specified in Article 3.07. Only hand operated mechanical compacting equipment shall be used within six inches of the installed pipe.
- B. After the initial portion of backfill has been placed as specified above, and after all excess water has completely drained from the trench, backfilling of the remainder of the trench may proceed. The remainder of the backfill shall be selected material obtained from the excavation and shall be placed in horizontal layers, the depth of which shall not exceed the ability of the compaction equipment employed, and in no event shall exceed a depth of 9 inches. Each layer shall be moistened, tamped, puddled, rolled or compacted to the densities specified in Article 3.07.
- C. Any excavation below the levels required for the proper construction of manholes or vaults shall be filled with Class B concrete. The use of earth, rock, sand or other materials for this purpose will not be permitted.

3.07 COMPACTION AND DENSITIES

- A. Compaction of backfill shall be 98 percent of the maximum density where the trench is located under structures or paved areas, and 95 percent of the maximum density elsewhere. More thorough compaction may be required when Work is performed in other regulatory agencies jurisdictions, such as the FDOT. Methods of control and testing of backfill construction are:
 - 1. Maximum density of the material in trenches shall be determined by ASTM D 1557.
 - 2. Field density of the backfill material in place shall be determined by ASTM D 1556 or D 2922.
- B. Testing: Laboratory and field density tests, which in the opinion of the CITY are necessary to establish compliance with the compaction requirements of these Specifications, shall be ordered by the CITY. The CONTRACTOR shall coordinate and cooperate with the testing laboratory. The testing program will be implemented by the CITY establishing depths and locations of tests. Modifications to the program will be made as job conditions change.
- C. Trench backfill which does not comply with the specified densities, as indicated by such tests, shall be reworked and recompacted until the required compaction is secured, at no additional cost to the CITY. The costs for retesting such Work shall be paid for by the CONTRACTOR.

3.08 ADDITIONAL EXCAVATION AND BACKFILL

- A. Where organic material, such as roots, muck, or other vegetable matter, or other material which, in the opinion of the CITY, will result in unsatisfactory foundation conditions, is encountered below the level of the proposed pipe bedding material, it shall be removed to a depth of two feet below the outside bottom of the pipe or to a greater depths as directed by the CITY and removed from the site. Sheeting shall be installed if necessary to maintain pipe trenches within the limits identified by the CITY. The resulting excavation shall be backfilled with suitable backfill material, placed in 12-inch layers, tamped and compacted up to the level of the bottom of the proposed pipe bedding material. Sufficient compaction of this material shall be performed to protect the proposed pipe against settlement. Lean concrete may be used in lieu of backfill when pipe installation is in the wet or at the CONTRACTOR's option. Construction shall then proceed in accordance with the provisions of Article 3.05 "Pipe Bedding".
- B. Additional excavation (more than two feet below the pipe) shall be performed when ordered by the CITY. Where organic or other material is encountered in the excavation, the CONTRACTOR shall bring the condition to the attention of the CITY and obtain his determination as to whether or not the material will require removal, prior to preparing the pipe bedding. The excavation of material up to a depth of two feet below the outside bottom is an incidental item of construction and the Work shall be done at no additional cost to the CITY. Where ordered by the CITY, excavation greater than two feet below the pipe and additional backfill will be compensated by the CITY.

3.09 FINE GRADING

- A. After piping trenches backfilled, the disturbed areas of the site shall be fine graded. Any lumber, undesirable materials and rocks larger than the 3-inch size shall be removed from the surface. The completed surface shall be to the preconstruction elevation unless otherwise directed by the CITY. Minor adjustments to line and grade may be required as the work progresses in order to satisfy field conditions.

3.10 ALTERNATE METHOD OF CONSTRUCTION

- A. Use of This Method: A combination of conditions in the substrate, water table, or method of disposal may be encountered during the course of the work which makes dewatering impossible, or only possible through the use of unusual methods, the cost of which is excessive. When such conditions are encountered, but only after all reasonable means (pumps, well points, etc.) to dewater the excavation have been employed without success, the CONTRACTOR, may request to employ the following Alternate Method of Construction. The concurrence of the CITY shall be obtained in writing and shall limit the use of the alternate method of construction to such specific portions of the Work as the CITY shall determine.
- B. The requirements set forth in other sections of these Specifications shall establish the required standards of construction quality for this work. Use of the alternate method of construction described hereinafter shall in no way be construed as relieving the CONTRACTOR of the work. No additional payment will be made to the CONTRACTOR for excavation, backfill, sheeting or any cost incurred for Work or materials, or any other

costs incurred as a result of the use of this alternate method of construction. The prices established in the Proposal shall be for full payment for the various items of work.

- C. Subject to all the requirements stated herein, including written acceptance of the CITY, construction will be permitted in accordance with the following specifications. All requirements of these Specifications shall apply to this construction unless otherwise specifically modified herein.
- D. Removal of Water: The installation of pipe and appurtenances under water will be permitted and the requirements of Article 3.03 will be waived.
- E. Excavation shall be performed in accordance with Article 3.01.
- F. Pipe Bedding: Pipe bedding shall be placed from 6 inches below the outside bottom of the proposed pipe barrel up to the centerline of the pipe barrel. The bedding material shall be pearock as specified in Article 2.03 "Pearock". Limerock screenings, sand or other fine organic material shall not be used.
- G. The bedding material shall be placed and then be shaped to receive the pipe at the intended elevation. Bedding shall be provided under the branch of all fittings to furnish adequate support and bearing under the fitting.
- H. Backfill: After the pipe is installed, backfilling shall proceed in accordance with the provisions of Article 3.06 "Backfill" and 3.07 "Compaction and Densities". Select backfill material shall be used to backfill around the pipe and to a level one foot above the crown of the pipe. Under no circumstances will material other than select backfill or specified pipe bedding material be considered satisfactory for this purpose.
- I. If the Alternate Method of Construction is used, all backfill material, including specified pipe bedding material, shall be carefully lifted into the trench and not released to fall freely therein until the bucket or container is at or just above water level. Under no circumstances will backfill material be dumped or pushed into the trenches containing water. Below existing water level, the backfill material shall be carefully rammed into place in uniform layers, of equal depth on each side of the pipe, up to the water level. Above the water level, backfill material shall be placed and compacted for normal backfill as previously specified.

3.09 RESTORATION OF EXISTING SURFACES

- A. Restore all grassed areas disturbed by the trenching operations by resodding in accordance with the Contract Documents.
- B. Restore all asphaltic concrete pavement areas disturbed by the trenching operations in accordance with the Section entitled "Asphaltic Concrete Pavement."
- C. Restore all concrete pavement, curbs, and sidewalks disturbed by the trenching operations in accordance with the Section entitled "Concrete Pavement, Curbs and Sidewalks."

- END OF SECTION -

SECTION 02500 - SURFACE RESTORATION

PART 1 -- GENERAL

1.01 THE REQUIREMENT

- A. Items specified in this Section include repairs to landscaped and grassed areas that may be damaged or disturbed by CONTRACTOR activities.

1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Asphaltic Concrete Pavement.
- B. Site Grading
- C. Concrete Pavement, Curb, and Sidewalks

1.03 SUBMITTALS

- A. The CONTRACTOR shall submit submittals for review in accordance with Section 01300 - Submittals.

1.04 DEFINITIONS

- A. The phrase "DOT Specifications" shall refer to the Florida Department of Transportation Standard Specifications for Road and Bridge Construction. The DOT Specifications are referred to herein and are hereby made a part of this Contract to the extent of such references, and shall be as binding upon the Contract as though reproduced herein in their entirety.

1.05 PROTECTION OF EXISTING IMPROVEMENTS

- A. The CONTRACTOR shall be responsible for the protection of all pavements and other improvements within the work area. All damage to such improvements, as a result of the CONTRACTOR'S operations, beyond the limits of the work of pavement replacement shall be repaired by the CONTRACTOR at his expense.

1.06 GUARANTEE

- A. The CONTRACTOR shall guarantee all trees, ground cover or shrubs planted or replanted under this Contract for a period of one year beyond acceptance of the project. In the event that any new tree, plant or shrub dies within the guarantee period, the CONTRACTOR shall be responsible for replacement in kind. In the event that a transplanted (reused) tree dies within the guarantee period, the CONTRACTOR shall be responsible for replacement in kind, except that the maximum height of any new tree shall be eight feet as measured from the ground surface, once planted, to the top of the tree.

PART 2 -- PRODUCTS

2.01 REPLACEMENT TREES, GROUND COVER AND SHRUBS

- A. Replacement trees, ground cover and shrubs shall be of the same type and size and sound, healthy and vigorous, well branched and densely foliated when in leaf. They shall have healthy, well developed root systems and shall be free of disease and insect pests, eggs or larvae.

2.02 MULCH

- A. Mulch shall be windproof shredded eucalyptus; mulch shall be clean, fresh, free of branches and other foreign matter. Mulch shall be used around all shrubs, ground covers and tree trunks, and placed to a minimum depth of 2 inches extending from the tree trunk outward two feet.

2.03 GRAVEL BEDS

- A. Filter Fabric: Filter fabric shall be nonwoven polyester material Trevia Type 1120 as manufactured by Hoechst Fibers Industries, or equal. Fabric weight shall be 6 ounces per square yard, puncture strength maximum 40 pounds, minimum Flux 240 gallons per minute per square foot. Fabric shall be installed in accordance with the manufacturer's recommendations, with precautions taken to avoid tearing the fabric. Fabric shall be laid in strips with a minimum overlap of one foot.
- B. Limerock: Limerock shall meet ASTM A57 standards and shall be prewashed. Maximum size shall be 3/4 inches. Limerock shall be carefully placed and spread on the fabric to a minimum depth of 6 inches. Final grades and locations shall be as designated on the Drawings.

2.04 SOD

- A. Sod shall conform to the requirements of Section 02934 – Sodding.

PART 3 -- EXECUTION

3.01 GRADING AND SODDING

- A. The CONTRACTOR shall regrade the work areas disturbed by his construction activities to the existing grade prior to commencement of construction.
- B. Sod shall be placed on all grassed areas disturbed by construction activities, unless otherwise indicated on the Drawings. Sodding shall be in accordance with Sections 575 and 981 of the DOT Specifications.
- C. Maintenance: Sufficient watering shall be done by the CONTRACTOR to maintain adequate moisture for optimum development of the sodded areas. Sodded areas shall receive no less than 1.5 inches of water per week.

- D. Repairs to Lawn Areas Disturbed by CONTRACTOR's Operations: Lawn areas damaged by CONTRACTOR's operations shall be repaired at once by proper sod bed preparation, fertilization and resodding, in accordance with these specifications. Regardless of the condition of the lawn area (weed content etc.) prior to the CONTRACTOR working in the area, all repairs shall be made with sod.

3.02 TREES, GROUND COVER AND SHRUBS

- A. Excavation and Plant Holes: Plant hole excavations shall be roughly cylindrical in shape, with the side approximately vertical. Plants shall be centered in the hole. Bottoms of the holes shall be loosened at least six inches deeper than the required depth of excavation.
- B. Holes for balled and burlaped plants shall be large enough to allow at least eight inches of backfill around the earth ball. For root balls over 18 inches in diameter, this dimension shall be increased to 12 inches. Where excess material has been excavated from the plant hole, the excavated material shall be disposed of as and where directed by the CITY.
- C. Setting of Plants: When lowered into the hole, the plant shall rest on a prepared hole bottom such that the roots are level with, or slightly above, the level of their previous growth and so oriented such as to present the best appearance. The CONTRACTOR, when setting plants in holes, shall make allowances for any anticipated settling of plants.
- D. Palms of the sabal species may be set deeper than the depth of their original growth, provided that the specified clear trunk height is attained.
- E. The backfill shall be made with planting mixture and shall be firmly rodded and watered-in, so that no air pockets remain. The quantity of water applied immediately upon planting shall be sufficient to thoroughly moisten all of the backfilled earth. Plants shall be kept in a moistened condition for the duration of the Contract.
- F. Staking and Guying: Plants shall be staked in accordance with the following provisions:
 - 1. Small Trees: For trees and shrubs of less than one-inch caliper, the size of stakes and the method of tying shall be such as to rigidly support the staked plant against damage caused by wind action or other effects. Trees larger than one inch and smaller than one and one-half inch caliper shall be staked with a two-inch stake, set at least 24 inches in the ground and extending to the crown of the plant. The plant shall be firmly fastened to the stake with two strands of 14 gauge soft wire, enclosed in rubber hose, or other approved covering. The wire shall then be nailed or stapled to the stake to prevent slippage.
 - 2. Medium Trees: All trees, other than palm trees, larger than one and one-half inch caliper and smaller than two and one-half inch caliper shall be staked with two or more, two-inch by two-inch stakes, eight feet long, set two feet in the ground. The tree shall be midway between the stakes and held firmly in place by two strands of 12-gauge wire, applied as specified above for single stakes. The wires shall be tightened and kept tight by twisting.

3. Large Trees: All trees, other than palm trees, larger than two and one-half inch caliper, shall be braced with three or more two-inch by four-inch wood braces, toenailed to cleats which are securely banded at two points to the palm, at a point at least six feet above the ground. The trunk shall be padded with five layers of burlap under the cleats. Braces shall be approximately equidistantly spaced and secured underground with two-inch by four-inch by 24-inch stake pads. In firm rock soils, Number 4 steel reinforcing rods or one-half inch pipe is acceptable.
 4. Palm Trees: Palm trees shall be braced with three or more two-inch by four-inch wood braces, toenailed to cleats which are securely banded at two points to the palm, at a point at least six feet above the ground. The trunk shall be padded with five layers of burlap under the cleats. Braces shall be approximately equidistantly spaced and secured underground with two-inch by four-inch by 24-inch stake pads. In firm rock soils, Number 4 steel reinforcing rods or one-half inch pipe is acceptable.
- G. Pruning: All broken or damaged roots shall be cut off smoothly, and the tops of all trees shall be pruned in a manner complying with standard horticultural practice. At the time pruning is completed, all remaining wood shall be alive. All cut surfaces of one inch or more in diameter, above the ground, shall be treated with an approved commercial tree paint.
- H. Maintenance: Maintenance shall begin immediately after each plant is planted and shall continue until all work under this Contract has been completed and accepted by the CITY. Plants shall be watered, mulched, weeded, pruned, sprayed, fertilized, cultivated and otherwise maintained and protected. Settled plants shall be reset to proper grade position, planting saucer restored and dead material removed. Guys shall be tightened and repaired.
- I. Defective work shall be corrected as soon as possible after it becomes apparent. Upon completion of planting, the CONTRACTOR shall remove excess soil and debris, and repair any damage to structures, etc., resulting from planting operations.
- 3.03 GRAVEL BEDS
- A. Clean, grade and place geotextile prior to placing gravel in gravel beds.

- END OF SECTION -

SECTION 02510 - ASPHALTIC CONCRETE PAVEMENT

PART 1 - GENERAL

1.01 THE REQUIREMENT

- A. Construct asphaltic concrete pavement in accordance with the lines, grades and typical sections as indicated on the Drawings, specified herein and as required for a complete installation.
- B. Replace and / or repair all existing asphaltic concrete pavement areas impacted by contractor operations, including trenching for new utilities, as well as damage that may result from contractor operations during the progress of the Work.
- C. Temporary asphalt / trench repairs shall be installed within 1 week of excavation and backfill work on plant roadways impacted by construction.

1.02 SUBMITTALS

- A. The CONTRACTOR shall submit its proposed formulae for the asphaltic concrete paving for review in accordance with the Section entitled "Submittals".

1.03 QUALITY CONTROL

- A. The phrase "DOT Specifications" shall refer to the Florida Department of Transportation Standard Specifications for Road and Bridge Construction. The DOT Specifications, are referred to herein and are hereby made a part of this Contract to the extent of such references, and shall be as binding upon the Contract as though reproduced herein in their entirety.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Limerock Base: The limerock base shall consist of two courses of Miami Oolite limerock in accordance with Sections 200 and 911 of the DOT Specifications.
- B. Prime Coat: The material used for the prime coat shall be cut-back Asphalt Grade RC-70 conforming to Sections 300 and 916 of the DOT Specifications for prime to be used on Miami Oolite formation limerock.
- C. Asphaltic Concrete: Type SP 9.5 and SP 12.5 meeting the requirements in Section 334 of the DOT Specifications.
- D. Reclaimed Asphalt: Reclaimed asphalt shall not be utilized.

- E. Tack Coat: The material used for the tack coat shall be emulsified asphalt grade RS-2 conforming to DOT Sections 300 and 916.

PART 3 -- EXECUTION

3.01 INSTALLATION

- A. Subgrade: Roadway subgrades shall be stabilized to the minimum depth shown on the Drawings to a Florida Bearing Value (F.B.V.) of not less than 75. Stabilizing shall be type C as defined in Section 160 of the DOT specifications. Stabilization may require the addition and thorough mixing in of crushed limerock, coarse limerock screenings, or any other stabilizing material acceptable to the ENGINEER. The stabilizing material shall be applied in such quantity that, after mixing and blending, the subgrade will have a F.B.V. of not less than 75. Stabilizing material shall be mixed or blended in the subgrade material by plowing, scarifying, disking, harrowing, blading and mixing with rotary tillers until the mixed materials are of uniform bearing value throughout the width and depth of the layer being processed. The minimum acceptable density at any location will be 100 % of maximum dry density as determined by AASHTO T-180.
- B. At least three density determinations shall be made on each day's final compaction operations on each course and the density determinations shall be made at more frequent intervals if deemed necessary by the ENGINEER.
- C. Limerock Base: The limerock base shall be constructed in accordance with Section 200 of the DOT Specifications, to the thickness and width indicated on the Drawings. Pavement base shall be constructed in two lifts.
- D. After spreading of the base material is completed, the entire surface shall be scarified and shaped so as to produce the exact grade and cross section after compaction. For double course base, this scarifying shall extend a depth sufficient to penetrate slightly the surface of the first course. The maximum depth of each lift shall be 6-inches.
- E. When the material does not have the proper moisture content to insure the required density, wetting or drying shall be required. If the material is deficient in moisture, water will be added and uniformly mixed in by disking the base course to its full depth. If the material contains an excess of moisture, it shall be allowed to dry before being compacted. Wetting and drying operations shall involve manipulation of the entire width and depth of the base as a unit. As soon as proper conditions of moisture are attained, the material shall be compacted to an average density not less than 98% of maximum dry density as determined by AASHTO T-180. Where the base is being constructed in more than one course, the density shall be obtained in each lift of the base.
- F. During final compacting operations, if blading of any areas is necessary to obtain the true grade and cross section, the compacting operations for such areas shall be completed prior to making the density determination on the finished base.

- G. Unless otherwise directed by the ENGINEER, the surface shall be "hard-planed" with a blade grader immediately prior to the application of the prime coat to remove the thin glaze or cemented surface and to allow free penetration of the prime material. The materials planed from the base shall be removed from the base area.
- H. If cracks or checks appear in the base, either before or after priming, which in the opinion of the ENGINEER, would impair the structural efficiency of the base course, the CONTRACTOR shall remove such cracks or checks by reclarifying, reshaping, adding base material where necessary and recompacting, at no additional cost to the Owner.
- I. Mixing Base and Subgrade: If at any time the subgrade material shall become mixed with the base course material, the CONTRACTOR shall, without additional compensation, dig out and remove the mixture, reshape and compact the subgrade and replace the materials removed with clean base material, which shall be shaped and compacted as specified above.
- J. Prime Coat: The prime coat shall be applied at a rate of 0.15 gallons per square yard and the work performed in accordance with Section 300 of the DOT Specifications.
- K. Asphaltic Concrete: The spreading, compacting and jointing the wearing surface shall be in accordance with Sections 330 and 333 of the DOT Specifications to the thickness indicated on the Drawings.
- L. Tack Coat: Apply tack coat at a rate between 0.02 and 0.10 gallons per square yard, and perform the Work in accordance with Section 300 of the DOT Specifications.

3.02 TEMPORARY TRENCH REPAIR OR STABILIZATION

- A. Following trenching and backfill within active plant roadways, but prior to final asphalt replacement at substantial completion, the CONTRACTOR shall install temporary trench repair, consisting of compacted base course and temporary asphalt.
- B. Temporary trench repair shall include the preparation of the subgrade, the placing and compacting of the limerock base, the priming of the base, the placing and maintaining of the surface treatment, all as specified herein.
- C. The width of trench repairs shall extend at least 12 inches beyond the limits of the asphalt impacted by excavation. The edge of the pavement to be left in place shall be cut to a true edge with a saw or other approved method so as to provide a clean edge to abut the repair. The line of the repair shall be reasonably uniform with no unnecessary irregularities.

3.03 PAVEMENT MARKINGS

- A. All existing markings (i.e., lanes, edge of pavement, parking stalls, etc.) impacted by the CONTRACTOR during construction shall be replaced with new painted items in accordance with the requirements of Section 971 of the DOT Specifications.

3.04 CONNECTIONS WITH EXISTING FACILITIES

- A. Where the bituminous pavement is to be connected with an existing roadway surface or other facility, the CONTRACTOR shall modify the existing roadway profile in such a manner as to produce a smooth riding connection to the existing facility.
- B. Where it is necessary to remove existing asphalt surfaces to provide proper meet lines and riding surfaces, the CONTRACTOR shall saw cut the existing surface so that there will be sufficient depth to provide a minimum of 1-inch of asphalt concrete, and the waste material shall be disposed of to the satisfaction of the ENGINEER. Prior to placing the asphalt concrete, these areas shall be tacked. Meet lines shall be straight and the edges vertical. The edges of meet line cuts shall be painted with liquid asphalt or emulsified asphalt prior to placing asphalt concrete. After placing the asphalt concrete, the meet line shall be sealed by painting with a liquid asphalt or emulsified asphalt and immediately covered with clean, dry sand.

3.05 SURFACE TOLERANCE

- A. Tests for conformity with the specified grade shall be made immediately after initial compression. Any variation shall be immediately corrected by the removal or addition of materials and by continuous rolling.
- B. The completed surface of the pavement shall be of uniform texture, smooth, uniform as to grade, and free from defects of all kinds. The completed surface shall not vary more than 1/8 inch from the lower edge of a 12-foot straightedge placed on the surface along the centerline or across the trench.
- C. After completion of the final rolling, the smoothness and grade of the surface shall again be tested by the CONTRACTOR.
- D. When deviations in excess of the above tolerances are found, the pavement surface shall be corrected as stated in Section 330-12.4 of the DOT Specifications.
- E. All areas in which the surface of the completed pavement deviates more than twice the allowable tolerances described above shall be removed and replaced to the satisfaction of the ENGINEER

3.06 WEATHER CONDITIONS

- A. Asphalt shall not be applied to wet material. Asphalt shall not be applied during rainfall or any imminent storms that might adversely affect the construction. The ENGINEER will determine when surfaces and materials are dry enough to proceed with construction. Asphalt concrete shall not be placed during heavy rainfall or when the surface upon which it is to be placed is wet.

3.07 PROTECTION OF STRUCTURES AND ADJUSTMENT OF APPURTENANCES

- A. Provide whatever protective coverings may be necessary to protect the exposed portions of bridges, culverts, curbs, gutters, posts, guard fences, road signs, and any other structures from splashing oil and asphalt from the paving operations. Remove any oil, asphalt, dirt, or any other undesirable matter that may come upon these structures by reason of the paving operations.
- B. Where water valve boxes, manholes, catch basins, or other underground utility appurtenances are within the area to be surfaced, the CONTRACTOR shall adjust the covers of these improvements to conform with the proposed surface elevations.
- C. In this effort, the CONTRACTOR shall be responsible for ensuring that appurtenances are brought to proper grade to conform with finished surface elevations and any delays experienced from such obstructions will be considered as incidental to the paving operation. No additional payment will be made. Protect all covers during asphalt application.

3.08 PAVEMENT WARRANTY

- A. Settlement of replaced pavement over trenches within the warranty period shall be considered the result of improper or inadequate compaction of the sub-base or base materials. The CONTRACTOR shall promptly repair all pavement deficiencies noted during the warranty period at the CONTRACTOR's sole expense.

- END OF SECTION -

SECTION 02526 – CONCRETE PAVEMENT, CURBS AND SIDEWALKS

PART 1 -- GENERAL

1.01 SCOPE

- A. The CONTRACTOR shall construct concrete pavement, curbs and sidewalks to the lines and grades and dimensions required for a complete installation as shown on the Drawings and specified herein.
- B. Damaged concrete pavement, curbs and sidewalks, and other improvements shall be reconstructed as new to existing lines and grades and dimensions. Where pavement, curbs, and sidewalks are partially damaged on private property, the CONTRACTOR shall fully reconstruct the structure in-kind to provide an entirely new structure.

1.02 SUBMITTALS

- A. Shop drawings for reinforcing, joint material and mix designs shall be submitted for review in accordance with the Section entitled "Submittals".

PART 2 -- PRODUCTS

2.01 CONCRETE

- A. Concrete shall be Class B as specified in Division 3, unless noted or specified otherwise.

2.02 REINFORCING AND WELDED WIRE FABRIC

- A. Joint reinforcing and welded wire fabric shall conform to the requirements of Division 3.

2.03 PREFORMED JOINT FILLER

- A. Preformed joint filler shall be sponge rubber or cork and conform to the requirements of AASHTO Designated M153, Type I or II.

2.04 CURING COMPOUND

- A. Curing Compound shall conform to the requirements of AASHTO M148, Type I.

PART 3 -- EXECUTION

3.01 SUBGRADE CONDITION

- A. The finished subgrade shall be maintained in a smooth, compact condition and any areas which are disturbed prior to placing of the concrete shall be restored at no additional cost to the CITY.

- B. The subgrade shall be moist at the time the concrete is placed. Water shall be uniformly applied ahead of the paving operations as directed by the CITY. If the CONTRACTOR does not maintain the subgrade in the required moist condition, a polyethylene sheet vapor barrier will be required between the subgrade and the concrete.
- C. The subgrade shall be accurately trimmed to the required elevation with a 1/4 inch tolerance. High areas shall be trimmed to proper elevation. Low areas may be filled with suitable material and compacted to the specified density or filled with concrete integrally with the placing of the pavement.
- D. Boulders, rocks or obstructions larger than 1-inch diameter shall be removed to a minimum depth of 6-inches below finished subgrade. The subgrade shall be compacted at optimum moisture content to 98 percent of maximum dry density in accordance with ASTM D1557 method D.

3.02 SETTING FORMS

- A. The forms shall be accurately set to line and grade and such that they rest firmly, throughout their entire length upon the compacted subgrade surface. Forms shall be joined neatly and tightly and braced to test the pressure of the concrete and the finishing operations. The alignment and grade of all forms shall be approved before and immediately prior to the placing of concrete.

3.03 MIXING CONCRETE

- A. Concrete shall be mixed in accordance with Division 3.

3.04 PLACING CONCRETE

- A. The concrete shall be distributed on the subgrade to such depth, that, when it is consolidated and finished, the slab thickness required by the Drawings will be obtained at all points and the surface will at no point be below the grade specified for the finished surface, after application of the allowable tolerance. The concrete shall be deposited on the subgrade in a manner which will require as little rehandling as possible.
- B. Fabric reinforcement shall be placed at mid slab depth, and the fabric shall be maintained at this location during the placing and finishing operations.
- C. Concrete shall be thoroughly consolidated against and along the faces of all forms, by means of hand-operated, spud-type vibrators. Vibration at any one location shall not continue so long as to produce puddling or the accumulation of excessive grout on the surface. In no case shall the vibrator be operated longer than 15 seconds in any one location.

3.05 STRIKING-OFF, CONSOLIDATING AND FINISHING CONCRETE

- A. Immediately after the placing, the concrete shall be struck off, consolidated, and finished, to produce a finished pavement conforming to the cross section, width and surface sequence of operations shall be as follows: strike-off; vibratory consolidation; screening; floating; removal of laitance; straightedging; and final surface finish.

3.06 STRAIGHTEDGING AND SURFACE CORRECTIONS

- A. After floating has been completed and the excess water removed, but while the concrete is still in a plastic state, the surface of the concrete shall be tested for trueness with an accurate 10 foot straightedge. The straightedge shall be furnished by the CONTRACTOR. The straightedge shall be held in successive positions parallel to the road center line, in contact with the surface, and the whole area tested from one side of the slab to the other as necessary. Any depressions shall be immediately filled with freshly mixed concrete and struck-off; consolidated and refinished. High areas shall be cut down and refinished. Straightedge testing and surface correction shall continue until the entire surface appears to conform to the required grade and cross section.

3.07 FINAL FINISH

- A. As soon as the water sheen has disappeared from the surface of the pavement and just before the concrete becomes nonplastic, a light broom finish shall be given to the surface.

3.08 EDGING

- A. After the final finish has been applied, but before the concrete has become nonplastic, the edges of the pavement along each side of the strip being placed, on each side of construction joints and along any structure extending into the pavement, shall be carefully rounded to a 1/4 inch radius except as otherwise indicated. A well-defined and continuous radius shall be produced and a smoother, dense mortar finish obtained. All concrete shall be completely removed from the top of the joint filler.
- B. All joints shall be checked with a straightedge before the concrete has become nonplastic and, if one side of the joint is higher than the other or the entire joint is higher or lower than the adjacent slabs, corrections shall be made as necessary.

3.09 JOINTS

- A. Construction Joints: Construction joints shall be located as shown on the Drawings.
- B. Expansion Joints Around Structures: Expansion joints shall be formed by placing premolded expansion joint material about all structures and features projecting through, into or against the pavement. Unless otherwise indicated, such joints shall be 1/2 inch in width. Expansion joints shall be sealed with a joint sealer. Sealant application procedures shall be as recommended by the manufacturer.
- C. Transverse Expansion Joints: Open type transverse expansion joints shall be provided at all sidewalk returns and at 50 feet intervals and wherever indicated on the Drawings. Open type joints shall be formed by staking a 1/4 inch thick metal bulkhead in place and placing concrete on both sides. After the concrete has set sufficiently to preserve the width and shape of the joint, the bulkhead shall be removed. After the sidewalk has been finished over the joint, the slot shall be opened and edged with a tool having a 1/2 inch radius. Transverse expansion joints shall be cleaned and filled with joint filler strips 1/4 inch thick conforming to the requirements of AASHTO M-153 and sealed with a joint sealer. Sealant application procedures shall be as recommended by the manufacturer.

- D. Scored Joints: Scored joints shall be either formed or sawed at 5-foot intervals and shall extend to a depth of at least one fourth of the sidewalk slab thickness.

3.10 CURING

- A. After the finishing operations have been completed and as soon as the concrete has hardened sufficiently that marring of the surface will not occur, the entire surface and the edges of the newly placed concrete shall be covered and cured with membrane curing compound.
- B. Curing compound shall be uniformly applied to the surfaces to be cured, in a single coat, continuous film, at the rate of one gallon to not more than 200 square feet, by a mechanical sprayer.
- C. Curing compound shall not be applied during periods of rainfall. Curing compound shall not be applied to the inside faces of joints to be sealed. Should the film become damaged from any cause within the required curing period, the damaged portions shall be repaired immediately with additional compound. Upon removal of side forms the sides of the slabs exposed shall immediately be coated to provide a curing treatment equal to that provided for the surface.

3.11 CURB AND SIDEWALK CONSTRUCTION

- A. The concrete curbs and sidewalks shall be constructed on a prepared smooth subgrade of uniform density. Large boulders and other obstructions shall be removed to a minimum depth of 6 inches below the finished subgrade elevation and the space shall be backfilled with sand, base course material or other suitable material which shall be thoroughly compacted by rolling or tamping. The CONTRACTOR shall furnish a template and shall thoroughly check the subgrade prior to depositing concrete.
- B. Concrete for curbs and sidewalks shall be formed, mixed, placed and finished in conformance with the requirements of Sections of Division 3, except as modified herein. Concrete shall be cured with a clear membrane curing compound which shall be applied at a uniform rate of one gallon per 200 square feet in accordance with the requirements specified herein before, under Pavement Construction. Sidewalks shall be given a light broom finish.

3.12 CURBS

- A. Curbs shall be constructed in uniform sections ten feet in length except where shorter sections are necessary for closures or arcs. The sections shall be separated by sheet metal templates set perpendicular to the face and tip of the curve and not less than 2 inches longer than the depth of the curb. The templates shall be held firmly during the placing of the concrete and shall be allowed to remain in place until the concrete has set sufficiently to hold its shape, but shall be removed while the forms are still in place.
- B. After the concrete has sufficiently set for a minimum of 12 hours, the CONTRACTOR shall remove the forms and backfill the spaces on each side. The earth shall be compacted in satisfactory manner with out damage to the concrete work. Minor defects

shall be filled with a mortar composed of one part portland cement and two parts fine aggregate.

3.13 PAVEMENT CURB AND SIDEWALK REPAIR

- A. All damage to pavement, curb or sidewalk as a result of work under this Contract shall be repaired in a manner satisfactory to the CITY and at no additional cost to the CITY. The repair shall include all work as specified herein.
- B. The width of all repairs shall extend at least 12 inches beyond the limit of the damage. The edge of the pavement curb or sidewalk to be left in place shall be cut to a true edge with a saw or other approved method so as to provide a clean edge to abut the repair. The line of the repair shall be reasonably uniform with no unnecessary irregularities.

- END OF SECTION -

SECTION 02580 -- PAVEMENT MARKING AND TRAFFIC SIGNS

PART 1 -- GENERAL

1.01 THE REQUIREMENT

- A. This section consists of striping pavement, traffic signs and parking stall wheel stops as indicated on the Drawings, specified herein and as required for a complete installation.

1.02 SUBMITTALS

- A. The CONTRACTOR shall submit shop drawings and other information to the ENGINEER for review in accordance with Section entitled "Submittals".
- B. The CONTRACTOR shall furnish the manufacturer's certification that all signs furnished conform to these specifications and shall replace or repair at its expense all signs that fail to meet this requirement.

1.03 QUALITY CONTROL

- A. The phrase "DOT Specifications" shall refer to the Florida Department of Transportation Standard Specifications for Road and Bridge Construction. The DOT Specifications, are referred to herein and are hereby made a part of this Contract to the extent of such references, and shall be as binding upon the Contract as though reproduced herein in their entirety.

PART 2 -- PRODUCTS

2.01 PAVEMENT MARKING

- A. Paint for pavement strips shall be Sherwin-Williams or Tnemec traffic paint or equal.

2.02 PARKING STALL WHEEL STOPS

- A. Parking stall wheel stops shall be standard precast concrete units painted with lettering or number as designated by the ENGINEER.

2.03 REFLECTIVE MARKERS

- A. Reflective markers shall be installed in the pavement in accordance with OSHA, DOT and County requirements.

2.04 TRAFFIC SIGNS

- A. General: Traffic regulating signs shall conform to the colors, dimensions and requirements of the Manual on Uniform Traffic Control Devices (ANSI) and displaying the lettering and symbols indicated on the Drawings.
- B. Sign Panels and Support Members: Sign panels and support members shall conform to Aluminum Association Alloy 6061-T6.

- C. Bolts: Bolts shall conform to Aluminum Association Alloy 2024-T4 with an anodic coating 0.0002-inches thick minimum and chromate sealed.
- D. Nuts: Nuts shall conform to Aluminum Association Alloy 6269-T9.
- E. Reflective Sheeting: Reflective sheeting shall conform to DOT Type A requirements.
- F. Construction Warning Signs: The CONTRACTOR shall install traffic and warning signs during construction in accordance with OSHA, DOT and County requirements.

PART 3 -- EXECUTION

3.01 FABRICATION

- A. Preparation of sign blanks and fabrication of reflectorized faces shall conform to the applicable requirements of DOT Sections 700-4 and 700-5.

3.02 INSTALLATION

- A. Sign and supports shall be erected in accordance with the details shown on the Drawings and as specified herein.

- END OF SECTION -

SECTION 02754 – CONCRETE SANITARY SEWER MANHOLES

PART 1 -- GENERAL

1.01 SCOPE

- A. The work specified in this Section includes all labor, materials, accessories, equipment and tools necessary for work at the manholes as shown on the drawings.

1.02 SUBMITTALS

- A. The CONTRACTOR shall submit Shop Drawings and other information for review in accordance with Section 01300 - Submittals, including: manhole section dimensions; elevations; cement type; concrete strength; reinforcement; lifting hooks; joint material; openings; castings; protective cast-in liners, joint configuration / details; dewatering, sheeting and bracing plans and other applicable information.
- B. The CONTRACTOR shall obtain the services from the liner manufacturer including, but not limited to the following: prepare shop drawings for liner installation and seal of the joints in the manholes; recommend test method for liner installation and welds for ENGINEER's approval; provide liner installation instructions and safety standards; on-site advisory assistance during installation of liner weld strips, overlaps, etc., and related seal welding; provide warranty for liners and seal joints in the manholes.

1.03 WARRANTY

- A. The CONTRACTOR shall warrant the sanitary sewer manhole materials, and installation to be free from defects.

PART 2 -- PRODUCTS

2.01 FRAMES AND COVERS

- A. All workmanship and materials shall be of the highest quality. The manhole ring and cover shall be the product of a manufacturer actively engaged in research, development, and manufacturing of watertight manhole rings and covers.
- B. CONTRACTOR shall be responsible to see that all such items as mentioned under this section are adjusted to the new paving elevation to provide a smooth and even transition from pavement to manhole cover.
- C. Frame and cover shall be set to grade. Lid adapters or adjustment rings shall not be used on new construction.

2.02 CONCRETE GRADE RINGS

- A. Grade rings shall be precast and manufactured in accordance with ASTM C478 and shall be reinforced concrete in solid rings a minimum of 8" wide from 1" to 4" thick.
- B. Concrete grade rings shall have dimensions matching the inside diameter of cone or flat top sections and be of adequate outside diameter to support the full manhole frame.
- C. Field molding of the grade rings is prohibited.
- D. Ram-Nek sealing gaskets, as manufactured by K.T. Snyder Company or equal, shall be installed on the top of manhole concrete rings. The seal gasket shall be glued to manhole ring using adhesive system as manufactured/recommended by the manufacturer.

2.03 PIPE TO MANHOLE SLEEVE

- A. Pipe shall be connected to new manhole by using a flexible manhole sleeve made from ethylene propylene rubber and conformed to ASTM C923. The sleeve shall be secured to the pipe by a clamp and grouted.
- B. The sleeve shall be manufactured by Chardon Rubber Company, (440) 285-2161, or approved equal.

PART 3 -- EXECUTION

3.01 PREPARATION

- A. Traffic Control: The CONTRACTOR is required to obtain all permits, use appropriate traffic regulating devices, notify all appropriate governmental agencies and conform to all the requirements listed in Section 01550 – Site Access and Storage.

3.02 EXCAVATION AND BACKFILL

- A. The CONTRACTOR shall excavate and backfill in accordance with Section 02224 - Excavation and Backfill for Structures. Under no circumstances shall the CONTRACTOR be allowed to remove concrete or asphalt without prior cutting. The saw cutting shall be deep enough to produce an even, straight cut. Backfilling shall occur in 12-inch lifts with compaction by an engine driven hand tamp or other mechanical means as acceptable to the ENGINEER. Compaction and backfill material shall be as specified in Section 02224.

3.03 DEWATERING, SHEETING AND BRACING

- A. The CONTRACTOR shall dewater, sheet and or brace all excavations in accordance with Section 02222 - Excavation and Backfill for Utilities. Well points, pumps, sheeting, bracing and/or sock drain shall be used to provide a safe, dry, open hole for all repairs or replacements specified herein.

3.04 DISPOSAL

- A. All excavated and demolished material such as manhole corbel, barrel, frame, cover, concrete, debris, sod, or any other items excavated shall become property of the CONTRACTOR. The CONTRACTOR shall take full responsibility for proper disposal and include the cost in the appropriate bid items.

3.05 SURFACE RESTORATION

- A. All surface restoration shall be in accordance with Section 02500 - Surface Restoration. Pavement, concrete, sod or any other surface items shall be replaced in equal or better condition.

- END OF SECTION -

SECTION 02934 - SODDING

PART 1 -- GENERAL

1.01 SCOPE

- A. Provide all labor, materials and equipment necessary for complete sodding of areas affected by construction. This shall include, but not be limited to: liming, fertilizing, sodding, necessary barriers, tests and all incidentals to make the work complete.

1.02 WORK INCLUDED

- A. Testing of topsoil.
- B. Raking and leveling topsoil as required for sodding.
- C. Liming and fertilizing of topsoil.
- D. Laying and rolling of sod.
- E. Maintaining sod.

1.03 SUBMITTALS

- A. Submit product source and information sheets in accordance with Section 01300, "Submittals".

PART 2 -- PRODUCTS

2.01 MATERIALS

- A. Fertilizer
 - 1. Fertilizer shall be commercial fertilizer, as manufactured by International Chemical Company or equal.
 - 2. Said fertilizer shall have a 10-20-6 N.P.K. content and contain a minimum of 60% of organic material.
 - 3. It shall be delivered at the site in the original sealed containers.
- B. Sod
 - 1. Sod from right-of-way swales within the work area shall be Bahia sod or replaced in-kind, whichever is finer quality.
 - 2. St. Augustine sod will be used for areas with irrigation systems and in locations with similar existing turf.
 - 3. Sod shall be first quality sod of firm texture having a compacted growth and good root development.

4. Sod shall be absolutely true to varietal type, live, fresh and free from weeds or objectionable vegetation, fungus, insects and disease of any kind. Sod shall be kept moist from the time it is field cut until it is laid at the proposed site.
5. The sod shall be as grown by a certified turf nursery and CONTRACTOR shall inform ENGINEER as to the source of the sod to be utilized prior to ordering and delivery of sod.
6. Sod shall be furnished and installed in rectangular sod strips measuring 12 to 16-inches in width of standard lengths of not less than 2 feet and delivered on pallets.

PART 3 -- EXECUTION

3.01 INSTALLATION

- A. These areas shall be fine graded to achieve the finished subgrade after compaction which shall be obtained by rolling, dragging or by an approved method which obtains an equivalent compaction to that produced by a hand roller weighing from 75 to 100 pounds per foot of width. All depressions caused by settlement or rolling shall be filled with additional existing or furnished topsoil and regraded and prepared as specified above until it presents a reasonably smooth and even finish at the required sod sub-grade.
- B. All sod furnished shall be living sod containing at least 70% of thickly matter grasses as specified and free from noxious weeds. All sod shall be certified free of fire ants.
- C. No broken pads or torn or uneven ends will be accepted. Standard size sections of sod shall be strong enough to support own weight and retain their size and shape when suspended vertically with a firm grasp on the upper 10% of the section. Sod shall not be harvested when its moisture content (excessively wet or dry) may adversely affect its survival.
- D. Sod shall be harvested, delivered, and installed within a period of 24 hours. Sod not installed within this time period shall be subject to inspection and rejection by ENGINEER, and shall be removed from the site and a fresh sod supply shall be furnished at no extra cost to CITY.
- E. The topsoil shall not be moist at time of installation; however, it shall contain sufficient moisture so as not be powdery or dusty, both as determined by the supplier's representative.
- F. The overlapping of existing lawn with new sod along limit of work lines will not be permitted. Sod shall be laid in strips, edge to edge, with the lateral joints staggered. All minor or unavoidable openings in the sod shall be closed with sod plugs or with topsoil, as directed by ENGINEER. However, sod laid with joints determined to be too large shall be lifted and re-laid as specified herein at no extra cost to CITY.

- G. Immediately after the sod is laid, the sod shall be watered thoroughly by hand or mechanical sprinkling until the sod and at least 2-inch of the top soil bed have been thoroughly moistened.
- H. CONTRACTOR shall be responsible to furnish his own supply of water to the site at no extra cost. If possible, CITY shall furnish CONTRACTOR, upon request, with a source and supply of water. CONTRACTOR shall apply for temporary meter and pay CITY for water used at current utility billing rates. However, if CITY's water supply is not available or not functioning, CONTRACTOR shall be responsible to furnish adequate supplies at his own cost. All work injured or damaged due to the lack of, or the use of too much water, shall be CONTRACTOR's responsibility to correct.

3.02 MAINTENANCE

- A. Maintain the entire sodded areas at least a 30-day period or until final acceptance at the completion of the Contract, whichever is longer. Maintenance shall include watering as specified, weeding and removal of stones which may appear. All bare or dead spots which become apparent shall be properly prepared, limed and fertilized, and resodded at CONTRACTOR's expense as many times as necessary to secure a good growth. In the event that the sod installation is not accepted by ENGINEER, the entire area shall be maintained and cut by CONTRACTOR until final acceptance of the sod installation.
- B. Take whatever measures are necessary to protect the sod while it is developing. These measures shall include furnishing of warning signs, barriers, or any other necessary measures of protection.

- END OF SECTION -

DIVISION 3 – CONCRETE

SECTION 03100 - CONCRETE FORMWORK

PART 1 -- GENERAL

1.01 THE REQUIREMENT

- A. The CONTRACTOR shall design and furnish all materials for concrete formwork, bracing, and supports and shall design and construct all falsework, all in accordance with the provisions of the Contract Documents.

1.02 RESPONSIBILITY

- A. The design and engineering of the formwork as well as safety considerations are the responsibility of the CONTRACTOR.

1.03 RELATED WORK SPECIFIED ELSEWHERE

- A. Section 01300 - Submittals
- B. Section 03200 - Concrete Reinforcement
- C. Section 03300 - Cast-in-Place Concrete
- D. Section 03315 - Grout

1.04 REFERENCE SPECIFICATIONS, CODES, AND STANDARDS

- A. Without limiting the generality of other requirements of these Specifications, all work specified herein shall conform to or exceed the requirements of the Building Code and the applicable requirements of the following documents to the extent that the provisions of such documents are not in conflict with the requirements of this Section.
 - 1. Codes and Standards
 - a. The Building Code, as referenced herein, is the Florida Building Code (FBC).
 - 2. Government Standards
 - a. PS 1 U.S. Product Standard for Concrete Forms, Class I.
 - 3. Commercial Standards
 - a. ACI 347 Recommended Practice for Concrete Formwork.
 - b. ACI 318 Building Code Requirements for Reinforced Concrete.
 - c. ACI 350 Code Requirements for Environmental Engineering Concrete Structures

1.05 QUALITY ASSURANCE

- A. The variation from established grade or lines shall not exceed 1/4 inch in 10 feet and there shall be no offsets or visible bulges or waviness in the finished surface. All tolerances shall be within the "Suggested Tolerances" specified in ACI 347. The CONTRACTOR shall grind smooth all fins and projections between formwork panels as directed by the ENGINEER.
- B. Curved forms shall be used for curved and circular structures that are cast-in-place. Straight panels will not be acceptable for forming curved structures.

PART 2 -- PRODUCTS

2.01 FORM MATERIALS

- A. Except as otherwise expressly accepted by the ENGINEER, all lumber brought on the job site for use as forms, shoring, or bracing shall be new material. All forms shall be smooth surface forms and shall be of the following materials:

Footing sides	-Construction grade Southern Pine or plywood.
Walls	-Steel or plywood panel
Columns	-Steel, plywood or fiber glass
Roof and floor Slabs	-Plywood
All other work	-Steel panels, plywood or tongue and groove lumber

- B. Materials for concrete forms, formwork, and falsework shall conform to the following requirements:
 - 1. Lumber shall be Southern Pine, construction grade or better, in conformance with U.S. Product Standard PS20.
 - 2. Plywood for concrete formwork shall be new, waterproof, synthetic resin bonded, exterior type Douglas Fir or Southern Pine plywood manufactured especially for concrete formwork and shall conform to the requirements of PS I for Concrete Forms, Class I, and shall be edge sealed. Thickness shall be as required to support concrete at the rate it is placed, but not less than 5/8-inch thick.

2.02 PREFABRICATED FORMS

- A. Form materials shall be metal, wood, plywood, or other acceptable 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 be an acceptable type that will accomplish such results. Wood forms for surfaces to be painted shall be Medium Density Overlaid plywood, MDO Ext. Grade.

2.03 FORMWORK ACCESSORIES

- A. Exterior corners in concrete members shall be provided with 3/4-inch chamfers. Re-entrant corners in concrete members shall not have fillets unless otherwise shown.

- B. Form 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.
- C. Form ties for water-retaining structures shall have integral waterstops. Removable taper ties may be used when acceptable to the ENGINEER. At locations where removable taper ties are acceptable, a preformed mechanical EPDM rubber plug shall be used to seal the hole left after the removal of the taper tie. Plug shall be X-Plug by the Greenstreak Group, Inc., or approved equal. Friction fit plugs shall not be used.
- D. Form release agent shall be a blend of natural and synthetic chemicals that employs a chemical reaction to provide quick, easy and clean release of concrete from forms. It shall not stain the concrete and shall leave the concrete with a paintable surface and shall be compatible with specified coatings. Formulation of the form release agent shall be such that it would minimize formation of "Bug Holes" in cast-in-place concrete.

PART 3 -- EXECUTION

3.01 EXAMINATION

- A. Forms to confine the concrete and shape it to the required lines shall be used wherever necessary. The CONTRACTOR shall assume full responsibility for the adequate design of all forms, and any forms which are unsafe or inadequate in any respect shall promptly be removed from the Work and replaced at the CONTRACTOR's expense. A sufficient number of forms of each kind shall be provided to permit the required rate of progress to be maintained. The design and inspection of concrete forms and falsework, shall comply with applicable local, state and Federal regulations. 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 ENGINEER 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. Concrete forms shall conform to the shape, lines, and dimensions of members as called for on the Drawings, and shall be substantially, free from surface defects, and 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.
- C. All 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. 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. Adequate clean-out holes shall be provided at the bottom of each lift of forms. The size, number, and location of such clean-outs shall be as acceptable to the ENGINEER.

- D. Concrete construction joints will not be permitted at locations other than those shown or specified, except as may be acceptable to the ENGINEER. 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 affect whatsoever on the concrete. Pipe stubs and anchor bolts shall be set in the forms where required.

3.02 EARTH FORMS

- A. Earth forms will not be permitted.

3.03 FOOTINGS, SLAB EDGES AND GRADE BEAMS

- A. Provide wood side forms for all footings, slab edges and grade beams.

3.04 APPLICATION - FORM RELEASE AGENT

- A. Apply form release agent on formwork in accordance with manufacturer's recommendations.

3.05 INSERTS, EMBEDDED PARTS AND OPENINGS

- A. Embedded Form 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 as specified for in Section 03350 entitled "Concrete Finishes". 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.

3.06 FORM CLEANING

- A. Forms may be reused only if in good condition and only if acceptable to the ENGINEER. Light sanding between uses will be required wherever necessary to obtain uniform surface texture on all exposed concrete surfaces. Exposed concrete surfaces are defined as surfaces which are permanently exposed to view. Unused tie rod holes in forms shall be covered with metal caps or shall be filled by other methods acceptable to the ENGINEER.

3.07 FORMWORK TOLERANCES

A. Formwork shall be constructed to ensure that finished concrete surfaces will be in accordance with the tolerances listed in ACI 347.

1. The following construction tolerances are hereby established and apply to finished walls and slab unless otherwise shown in the Drawings:

1. Variation from plumb:

A. In the lines and surfaces of columns, piers, walls, and in arises:

In any 10 ft of length ----- 1/4 in.

Maximum for the entire length ----- 1 in.

B. For exposed corner columns, control-joint grooves, and other conspicuous lines:

In any 20 ft length ----- 1/4 in.

Maximum for the entire length ----- 1/2 in.

2. Variations from the level or from the grades specified in the contract documents:

A. In slab soffits, ceilings, beam soffits and in arises, measured before removal of supporting shores:

In any 10 ft of length ----- 1/4 in.

In any bay or in 20 ft length ----- 3/8 in.

B. In exposed lintels, sills, parapets, horizontal grooves, and other conspicuous lines:

In any bay or in 20 ft length ----- 1/4 in.

Maximum for the entire length ----- 1/2 in.

3. Variation of the linear building lines from established position in plan and related position of columns, wall, and partitions:

In any bay----- 1/2 in.

In any 20 ft of length ----- 1/2 in.

Maximum for the entire length ----- 1 in.

4. Variation in the sizes and location of sleeves, floor openings, and wall openings ----- ±1/4 in.

5. Variation in cross-sectional dimensions of columns and beams and in the thickness of slabs and walls:

Minus ----- 1/4 in.

Plus----- 1/2 in.

6. Footings^{*}

A. Variations in dimensions in plan:

Minus ----- 1/2 in.

Plus----- 2 in.

- B. Misplacement or eccentricity
2 percent of the footing width in the direction of
misplacement but not more than ----- 2 in.
- C. Thickness:
Decrease in specified thickness ----- 5 percent
Increase in specific thickness ----- No limit

7. Variation in steps:

- A. In a flight of stairs:
Rise ----- ±1/8 in.
Tread----- ±1/4 in.
- B. In consecutive steps:
Rise ----- ±1/16 in.
Tread----- ±1/8 in.

**Tolerances apply to concrete dimensions only, not to positioning of vertical reinforcing steel, dowels, or embedded items.*

3.08 FORM REMOVAL

- A. Remove top forms on sloping surfaces of concrete as soon as removal operations will not allow the concrete to sag. Perform any needed repairs or treatments required on sloping surfaces at once, and follow immediately with the specified curing.
- B. The CONTRACTOR shall be responsible for the removal of forms and shores. Forms or shores shall not be removed before test cylinders have reached 75% of the specified minimum 28 day compressive strength for the class of concrete specified in Section 03300 entitled "Cast-in-Place Concrete", nor sooner than listed below:
 - 1. Foundation slab and grade beam side forms3 days
 - 2. Wall forms.....3 days
 - 3. Column forms3 days
 - 4. Overhead beam and girder side forms3 days
 - 5. Overhead beam bottoms and slab forms/shores.....14 days

3.09 MAINTENANCE OF FORMS

- A. Forms shall be maintained at all times in good condition, particularly as to size, shape, strength, rigidity, tightness, and smoothness of surface. Forms, when in place, shall conform to the established alignment and grades. Before concrete is placed, the forms shall be thoroughly cleaned. The form surfaces shall be treated with a nonstaining mineral oil or other lubricant acceptable to the ENGINEER and compatible with finishes, coatings and paints. Any excess lubricant shall be satisfactorily removed before placing the concrete. Where field oiling of forms is required, the CONTRACTOR shall perform the oiling at least two weeks in advance of their use. Care shall be exercised to keep oil off the surfaces of steel reinforcement and other metal items to be embedded in concrete.

- END OF SECTION -

SECTION 03200 - CONCRETE REINFORCEMENT

PART 1 -- GENERAL

1.01 THE REQUIREMENT

- A. The CONTRACTOR shall furnish, fabricate and place all concrete reinforcing steel, welded wire fabric, couplers, and concrete inserts for use in reinforced concrete and shall perform all appurtenant work, including all the wires, clips, supports, chairs, spacers, and other accessories and special work necessary to hold the reinforcing steel in place and protect it from injury and corrosion, all in accordance with the Contract Documents.

1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Section 01300 - Submittals
- B. Section 03100 - Concrete Formwork
- C. Section 03300 - Cast-in-Place Concrete
- D. Section 03315 - Grout

1.03 REFERENCE SPECIFICATIONS, CODES, AND STANDARDS

- A. Without limiting the generality of other requirements of these specifications, all Work specified herein shall conform to or exceed the requirements of the Building Code and the applicable requirements of the following documents to the extent that the provisions of such documents are not in conflict with the requirements of this Section.
 - 1. Codes and Standards
 - a. The Building Code, as referenced herein, is the Florida Building Code (FBC).
 - 2. Commercial Standards
 - a. ACI 315 Details and Detailing of Concrete Reinforcement.
 - b. CRSI Concrete Reinforcing Steel Institute Manual of Standard Practice
 - c. ACI SP66 ACI Detailing Manual
 - d. ACI 305 Hot Weather Concreting
 - e. ACI 318 Building Code Requirements for Reinforced Concrete.
 - f. ACI 350 Code Requirements for Environmental Engineering Concrete Structures
 - g. WRI Manual of Standard Practice for Welded Wire Fabric.

- h. ASTM A 1064 Specification for Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete.
- i. ASTM A 615 Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement.

1.04 SUBMITTALS

- A. The CONTRACTOR shall furnish shop bending diagrams, placing lists, and Drawings of all reinforcing steel prior to fabrication in accordance with the requirements of the Section 01300 entitled, "Submittals." The CONTRACTOR shall submit detailed placing and shop fabricating drawings, prepared in accordance with ACI 315 and ACI Detailing Manual - (SP66) for all reinforcing steel. These drawings shall be made to such a scale as to clearly show joint locations, openings, the arrangement, spacing and splicing of the bars. Where opening sizes are dependent on equipment selection the CONTRACTOR shall indicate all necessary dimensions to define steel lengths and placing details.
- B. Details of the concrete reinforcing steel and concrete inserts shall be submitted by the CONTRACTOR at the earliest possible date after receipt by the CONTRACTOR of the Notice to Proceed. Said details of reinforcing steel for fabrication and erection shall conform to ACI 315 and the requirements specified and shown. The shop bending diagrams shall show the actual lengths of bars, to the nearest inch measured to the intersection of the extensions (tangents for bars of circular cross section) of the outside surface. The shop Drawings shall include bar placement diagrams which clearly indicate the dimensions of each bar splice.
- C. Where mechanical couplers are shown on the Drawings to be used to splice reinforcing 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. Requests to relocate any bars that cause interferences or that cause placing tolerances to be violated.
- E. Proposed supports for each type of reinforcing.
- F. Certification that all installers of dowel adhesives are certified as Adhesive Anchor Installers in accordance with the ACI-CRSI Anchor Installer Certification Program.
- G. Certification of dowel adhesive installer training.
- H. International Code Council-Evaluation Services Evaluation Services Report (ICC-ES ESR) for dowel adhesives.
- I. Adhesive dowel testing plan.

1.05 QUALITY ASSURANCE

- A. Installer Qualifications for Drilled-In Rebar: Drilled-in rebar shall be installed by an Installer with at least three years of experience performing similar installations. Installer shall be certified as an Adhesive Anchor Installer in accordance with ACI-CRSI Adhesive Anchor Installation Certification Program.
- B. Installer Training: Conduct a thorough training with the manufacturer or the manufacturer's representative for the Installer on the project. Training shall consist of a review of the complete installation process for drilled-in anchors, to include but not be limited to the following:
 - 1. Hole drilling procedure.
 - 2. Hole preparation and cleaning technique.
 - 3. Adhesive injection technique and dispenser training/maintenance.
 - 4. Rebar doweling preparation and installation.
 - 5. Proof loading/torquing.
- C. Inspections of the adhesive dowel system may be made by the ENGINEER or other representatives of the OWNER in accordance with the requirements of the ESR published by the manufacturer. Provide adequate time and access for inspection of products and anchor holes prior to injection, installation, and proof testing.

PART 2 -- PRODUCTS

2.01 REINFORCEMENT

- A. All reinforcing steel for all reinforced concrete construction shall conform to the following requirements:
 - 1. Bar reinforcement shall conform to the requirements of ASTM A 615 for Grade 60 Billet Steel Reinforcement, and shall be manufactured in the United States. All reinforcing steel shall have the manufacturer's mill marking rolled into the bar which shall indicate the producer, size, type and grade. All reinforcing bars shall be deformed bars. Smooth reinforcing bars shall not be used unless specifically called for on the Drawings.
 - 2. Welded wire fabric reinforcement shall conform to the requirements of ASTM A 185 and the details shown on the Drawings; provided, that welded wire fabric with longitudinal wire of W9.5 size wire shall be either furnished in flat sheets or in rolls with a core diameter of not less than 10 inches; and provided further, that welded wire fabric with longitudinal wires larger than W9.5 size shall be furnished in flat sheets only. All welded wire fabric reinforcement shall be galvanized.
- B. Field welding of reinforcing steel will not be allowed.
- C. Use of coiled reinforcing steel will not be allowed.

2.02 ACCESSORY MATERIALS

- A. Accessories shall include all necessary chairs, slab bolsters, concrete blocks, tie wires, dips, supports, spacers and other devices to position reinforcing during concrete placement. Wire bar supports shall be plastic protected (CRSI Class 1).
- B. Tie Wire: Galvanized 16 gauge annealed type.
- D. Concrete blocks (dobies), used to support and position reinforcing steel, shall have the same or higher compressive strength as specified for the concrete in which it is located. Concrete blocks shall only be used bottom mat of reinforcing steel for slabs on grade.

2.03 MECHANICAL COUPLERS

- A. Mechanical couplers shall develop a tensile strength which exceeds 100 percent of the ultimate tensile strength and 125 percent of the yield strength of the reinforcing bars being spliced. The reinforcing steel and coupler used shall be compatible for obtaining the required strength of the connection.
- B. Where the type of coupler used is composed of more than one component, all components required for a complete splice shall be supplied.
- C. Hot forged sleeve type couplers shall not be used. Acceptable mechanical couplers are Dayton Superior Dowel Bar Splicer System by Dayton Superior, Dayton, Ohio, or approved equal. Mechanical couplers shall only be used where shown on the Drawings or where specifically approved by the Engineer.
- D. Where the threaded rebar to be inserted into the coupler reduces the diameter of the bar, the threaded rebar piece shall be provided by the coupler manufacturer.

2.04 DOWEL ADHESIVE SYSTEM

- A. Where shown on the Drawings, reinforcing bars anchored into hardened concrete with a dowel adhesive system shall use a two-component adhesive mix which shall be injected with a static mixing nozzle following manufacturer's instructions.
- B. All holes shall be drilled with a carbide bit unless otherwise recommended by the manufacturer. If coring holes is allowed by the manufacturer and approved by the Engineer, cored holes shall be roughened in accordance with manufacturer requirements.
- C. Thoroughly clean drill holes of all debris, drill dust, and water in accordance with manufacturer's instructions prior to installation of adhesive and reinforcing bar.
- D. Degree of hole dampness shall be in strict accordance with manufacturer recommendations. Installation conditions shall be either dry or water-saturated. Water filled or submerged holes shall not be permitted unless specifically approved by the Engineer.
- E. Injection of adhesive into the hole shall be performed in a manner to minimize the formation of air pockets in accordance with the manufacturer's instructions.

F. Embedment Depth:

1. The embedment depth of the bar shall be as show on the Drawings. Although all manufacturers listed below are permitted, the embedment depth shown on the Drawings is based on "SET-XP" by Simpson Strong-Tie Co. If the Contractor submits one of the other named dowel adhesives from the list below, the Engineer shall evaluate the required embedment and the Contractor shall provide the required embedment depth stipulated by the Engineer specific to the approved dowel adhesive.
2. Where the embedment depth is not shown on the Drawings, the embedment depth shall be determined to provide the minimum allowable bond strength equal to the tensile strength of the rebar according to the manufacturer's ICC-ES ESR.
3. The embedment depth shall be determined using the actual concrete compressive strength, a cracked concrete state, maximum long term temperature of 110 degrees F, and maximum short term temperature of 140 degrees F. In no case shall the embedment depth be less than the minimum, or more than the maximum, embedment depths stated in the manufacturer's ICC-ES ESR.

G. Engineer's approval is required for use of this system in locations other than those shown on the Drawings.

H. The adhesive system shall be IBC compliant for use in both cracked and uncracked concrete, must comply with the latest revision of ICC-ES Acceptance Criteria AC308, and shall have a valid ICC-ES report. The adhesive system shall be "Epcon System C6+ Adhesive Anchoring System" as manufactured by ITW Redhead, " HIT-HY 200 Injection Adhesive Anchor System" as manufactured by Hilti, Inc. "SET-XP" as manufactured by Simpson Strong-Tie Co. or "Pure 110+ Epoxy Adhesive Anchor System" by Powers Fasteners. Fast-set epoxy formulations shall not be acceptable.

I. All individuals installing dowel adhesive system shall be certified as an Adhesive Anchor Installer in accordance with the ACI-CRSI Anchor Installation Certification Program.

2.05 FABRICATION

A. Reinforcing steel shall be accurately formed to the dimensions and shapes shown on the Drawings, and the fabricating details shall be prepared in accordance with ACI 315 and ACI 318, except as modified by the Drawings. Stirrups and tie bars shall be bent around a pin having a diameter not less than 1-1/2 inch for No. 3 bars, 2-inch for No. 4 bars, and 2-1/2 inch for No. 5 bars. Bends for other bars shall be made around a pin having a diameter not less than 6 times the minimum thickness, except for bars larger than 1 inch, in which case the bends shall be made around a pin of 8 bar diameters. Bars shall be bent cold.

B. The CONTRACTOR shall fabricate reinforcing bars for structures in accordance with bending diagrams, placing lists, and placing Drawings. Said Drawings, diagrams, and lists shall be prepared by the CONTRACTOR as specified under Section entitled "Submittals," herein.

- C. Fabricating Tolerances: Bars used for concrete reinforcing shall meet the following requirements for fabricating tolerances:
 - 1. Sheared length: + 1 inch
 - 2. Depth of truss bars: + 0, - 1/2 inch
 - 3. Stirrups and ties: + 1/2 inch
 - 4. All other bends: + 1 inch
- D. Welded splice shall be provided where required on the drawings. All welded splices of reinforcing steel shall develop a tensile strength which exceeds 125 percent of the yield strength of the reinforcing bars which are connected.
- E. All materials required to perform the welded splices to the requirements of AWS D1.4 shall be provided.

PART 3 -- EXECUTION

3.01 DELIVERY, STORAGE AND HANDLING

- A. All reinforcing shall be neatly bundled and tagged for placement when delivered to the job site. Bundles shall be properly identified for coordination with mill test reports.
- B. Reinforcing steel shall be stored above ground on platforms or other supports and shall be protected from the weather at all times by suitable covering. It shall be stored in an orderly manner and plainly marked to facilitate identification.
- C. Reinforcing steel shall at all times be protected from conditions conducive to corrosion until concrete is placed around it.
- D. The surfaces of all reinforcing 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, reinforcing shall be reinspected and if necessary recleaned.

3.02 TEMPERATURE REINFORCEMENT

- A. Unless otherwise shown on the Drawings or in the absence of the steel being shown, the minimum cross sectional area of reinforcing steel in the direction of principal reinforcement shall be 0.0033 times the gross concrete area of all concrete members.
- B. Unless otherwise shown on the Drawings or in the absence of the steel being shown, the minimum cross sectional area of temperature reinforcing steel (reinforcing steel perpendicular to the principal reinforcing steel) shall be as follows:
 - 1. 0.0020 times the gross concrete area in slabs of non-water-bearing structures.
 - 2. 0.0015 times the gross concrete area vertically in walls of non-water-bearing structures.

3. 0.0025 times the gross concrete area horizontally in walls of non-water-bearing structures.
4. 0.0050 times the gross concrete area in slabs of water-bearing structures
5. 0.0030 times the gross concrete area vertically in walls of water-bearing structures.
6. 0.0050 times the gross concrete area horizontally in walls of water-bearing structures.
7. Temperature steel shall not be spaced further apart than five times the slab or wall thickness, nor more than 18 inches.

3.03 PLACEMENT

- A. Reinforcing steel shall be accurately positioned as shown on the Drawings, and shall be supported and wired together to prevent displacement, using annealed iron wire ties or suitable clips at intersections. All reinforcing steel shall be supported by concrete, plastic or metal supports, spacers or metal hangers which are strong and rigid enough to prevent any displacement of the reinforcing 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. All concrete blocks used to support reinforcing steel shall be tied to the steel with wire ties which are embedded in the blocks. For concrete over formwork, the Contractor shall furnish concrete, metal, plastic, or other acceptable bar chairs and spacers.
- B. The portions of all accessories in contact with the formwork shall be made of plastic or steel coated with a 1/8 inch minimum thickness of plastic which extends at least 1/2 inch from the concrete surface. Plastic shall be gray in color.
- C. Tie wires shall be bent away from the forms in order to provide the specified concrete coverage.
- D. Bars additional to those shown on the Drawings 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. Unless otherwise specified, reinforcement placing tolerances shall be within the limits specified in Section 7.5 of ACI 318 except where in conflict with the requirements of the Building Code.
- F. Bars may be moved as necessary to avoid interference with other reinforcing steel, 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 acceptable to the Engineer. Reinforcing bars shall not be cut to place electrical plumbing or mechanical conduits, piping, ducts, etc. without the expressed written approval of the Engineer of Record.
- G. Welded wire fabric reinforcement placed over horizontal forms shall be supported on slab bolsters having gray, plastic-coated standard type legs as specified in Paragraph B herein. Slab bolsters shall be spaced not less than 30 inches on centers, shall extend continuously

across the entire width of the reinforcing mat, and shall support the reinforcing mat in the plane shown on the Drawings.

- H. Welded wire fabric placed over the ground shall be supported on wired concrete blocks (dobies) spaced not more than 3 feet on centers in any direction. The construction practice of placing welded wire fabric on the ground and hooking into place in the freshly placed concrete shall not be used.
- I. The clear distance between parallel bars (except in columns and between multiple layers of bars in beams) shall be not less than the nominal diameter of the bars nor less than 1-1/3 times the maximum size of the coarse aggregate, nor less than one inch.
- J. Where reinforcement in beams or girders is placed in 2 or more layers, the clear distance between layers shall be not less than one inch.
- K. In columns, the clear distance between longitudinal bars shall be not less than 1-1/2 times the bar diameter, nor less than 1-1/2 times the maximum size of the coarse aggregate, nor less than 1-1/2 inches.
- L. The clear distance between bars shall also apply to the distance between a contact splice and adjacent splices or bars.
- M. Reinforcing bar splices shall only be used at locations shown on the Drawings. When it is necessary to splice reinforcement at points other than where shown, the character of the splice shall be as acceptable to the Engineer.
- N. The length of lap for reinforcing bars, unless otherwise shown on the Drawings shall be in accordance with ACI 318, Section 12.15.1 for a class B splice.
- O. Laps of welded wire fabric shall be in accordance with the ACI 318. Adjoining sheets shall be securely tied together with No. 14 tie wire, one tie for each 2 running feet. Wires shall be staggered and tied in such a manner that they cannot slip.
- P. Couplers which are located at a joint face shall be a type which can be set either flush or recessed from the face as shown on the Drawings. The couplers shall be sealed during concrete placement to completely eliminate concrete or cement paste from entering. After the concrete is placed, couplers intended for future connections shall be plugged and sealed to prevent any contact with water or other corrosive materials. Threaded couplers shall be plugged with plastic plugs which have an O-ring seal.
- Q. Reinforcing shall not be straightened or rebent in a manner which will injure the material. Bars with kinks or bends not shown on the Drawings shall not be used. All bars shall be bent cold, unless otherwise permitted by the Engineer. No bars partially embedded in concrete shall be field-bent except as shown on the Drawings or specifically permitted by the Engineer.
- R. Dowel Adhesive System shall be installed in strict conformance with the manufacturer's recommendations and as required in Article 2.04 above. A representative of the manufacturer must be on site prior to adhesive dowel installation to provide instruction on proper installation procedures for all adhesive dowel installers. Testing of adhesive dowels shall be as indicated below. If the dowels have a hook at the end to be embedded in subsequent work, an approved mechanical coupler shall be provided at a convenient

distance from the face of existing concrete to facilitate adhesive dowel testing while maintaining required hook embedment in subsequent work.

S. Adhesive Dowel Testing

1. At all locations where adhesive dowels are shown on the Drawings, at least 5 percent of all adhesive dowels installed shall be tested to the value indicated on the Drawings, with a minimum of one tested dowel per group. If no test value is indicated on the Drawings but the installed dowel is under direct tension, the Contractor shall notify the Engineer to verify the required test value.
2. Contractor shall submit a plan and schedule indicating locations of dowels to be tested, load test values and proposed dowel testing procedure (including a diagram of the testing equipment proposed for use) prior to conducting any testing. The testing equipment shall have a minimum of three support points and shall be of sufficient size to locate the edge of supports no closer than two times the anchor embedment depth from the center of the anchor.
3. Where Contract Documents indicate adhesive dowel design is the Contractor's responsibility, the Contractor shall submit a plan and schedule indicating locations of dowels to be tested and load test values, sealed by a Professional Engineer currently registered in the State of Florida. The Contractor shall also submit documentation indicating the Contractor's testing procedures have been reviewed and the proposed procedures are acceptable.
4. Adhesive Dowel shall have no visible indications of displacement or damage during or after the proof test. Concrete cracking in the vicinity of the dowel after loading shall be considered a failure. Dowels exhibiting damage shall be removed and replaced. If more than 5 percent of tested dowels fail, then 100 percent of dowels shall be proof tested.
5. Proof testing of adhesive dowels shall be performed by an independent testing laboratory hired directly by the Contractor. The Contractor shall be responsible for costs of all testing, including additional testing required due to previously failed tests.

3.04 CLEANING AND PROTECTION

- A. Reinforcing steel shall at all times be protected from conditions conducive to corrosion until concrete is placed around it.
- B. The surfaces of all reinforcing 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, reinforcing shall be reinspected and, if necessary recleaned.

- END OF SECTION -

SECTION 03300 - CAST-IN-PLACE CONCRETE

PART 1 -- GENERAL

1.01 THE REQUIREMENT

- A. The CONTRACTOR shall furnish all materials for concrete in accordance with the provisions of this Section and shall form, mix, place, cure, repair, finish, and do all other work as required to produce finished concrete, all in accordance with the requirements of the Contract Documents.
- B. The requirements in this section shall apply to the following types of concrete:
 - 1. Class A1 Concrete: Normal weight structural concrete to be used in all structures qualifying as environmental concrete structures that are designed in accordance with ACI 350 including pump stations, tanks, basins, process structures, and any structures containing fluids or process chemicals or other materials used in treatment process.
 - 2. Class A2 Concrete: Normal weight structural concrete to be used in walls of structures qualifying as environmental concrete structures as described above. Class A2 concrete is similar to Class A1 except that Class A2 shall contain a mandatory addition of high range water reducer.
 - 3. Class A3 Concrete: Normal weight structural concrete in all structures other than structures qualifying as environmental concrete structures as described above.
 - 4. Class B Concrete: Normal weight structural concrete with pea-rock aggregate. Class B concrete shall be used only at locations indicated on the Drawings or approved on a case by case basis by the Engineer.
 - 5. Class C Concrete: Normal weight structural concrete used in duct bank encasements, catch basins, fence and guard post embedment, concrete fill, sidewalks, and other areas where specifically noted on the Contract Drawings.
 - 6. Flowable Fill: Lean concrete proportioned without the use of coarse aggregate primarily for use as pipe backfill. Flowable fill shall be utilized only at locations indicated on the Drawings.

1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Section 01300 - Submittals
- B. Section 01400 – Testing and Inspection
- C. Section 03100 - Concrete Formwork
- D. Section 03200 - Concrete Reinforcement
- E. Section 03315 - Grout

F. Section 05500 - Metal Fabrications

1.03 REFERENCE SPECIFICATIONS, CODES, AND STANDARDS

A. Without limiting the generality of other requirements of these Specifications, all work specified herein shall conform to or exceed the requirements of the Florida Building Code (FBC) and the applicable requirements of the following documents to the extent that the provisions of such documents are not in conflict with the requirements of this Section.

B. Codes and Standards

1. The Building Code, as referenced herein, shall be the Florida Building Code.

C. Federal Specifications

1. UU-B-790A (Int.Amd. 1) Building Paper, Vegetable Fiber (Kraft, Waterproofed, Water Repellant and Fire Resistant).

D. Commercial Standards

1. ACI 214 Recommended Practice for Evaluation of Strength Test Results of Concrete.
2. ACI 301 Specifications for Structural Concrete for Buildings.
3. ACI 305 Hot Weather Concreting.
4. ACI 306 Cold Weather Concreting.
5. ACI 309 Recommended Practice for Consolidation of Concrete
6. ACI 315 Details and Detailing of Concrete Reinforcement.
7. ACI 318 Building Code Requirements for Reinforced Concrete.
8. ACI 347 Recommended Practice for Concrete Formwork.
9. ACI 350 Environmental Engineering Concrete Structures.
10. ASTM C 31 Methods of Making and Curing Concrete Test Specimens in the Field.
11. ASTM C 33 Specification for Concrete Aggregates.
12. ASTM C 39 Test Method for Compressive Strength of Cylindrical Concrete Specimens.
13. ASTM C 88 Test Method for Soundness of Aggregates by use of Sodium Sulfate or Magnesium Sulfate.

14. ASTM C 94 Specification for Ready-Mixed Concrete.
15. ASTM C 114 Method for Chemical Analysis of Hydraulic Cement.
16. ASTM C 136 Method for Sieve Analysis of Fine and Coarse Aggregate.
17. ASTM C 143 Test Method for Slump of Portland Cement Concrete.
18. ASTM C 150 Specification for Portland Cement.
19. ASTM C 156 Test Method for Water Retention by concrete Curing Materials.
20. ASTM C 157 Test Method for length Change of Hardened Cement Mortar and Concrete.
21. ASTM C 192 Method of Making and Curing concrete Test Specimens in the Laboratory.
22. ASTM C 227 Standard Test Method for Potential Alkali Reactivity of Cement Aggregate Combinations (Mortar-Bar Method).
23. ASTM C 260 Specification for Air-Entraining Admixtures for Concrete.
24. ASTM C 289 Standard Test Method for Potential Reactivity of Aggregates (Chemical Method).
25. ASTM C 494 Specification for Chemical Admixtures For Concrete.
26. ASTM C 586 Standard Test Method for Potential Alkali Reactivity of Carbonate Rocks for Concrete Aggregates (Rock Cylinder Method).
27. ASTM C 618 Standard Specification for Fly Ash and Raw or Calcined Natural Pozzolan for use as a Mineral Admixture in Portland Cement Concrete.
28. ASTM D 1751 Specification for preformed Expansion Joint Fillers for Concrete Paving and Structural Construction (Non-extruding and Resilient Bituminous Types).
29. ASTM D 6103 Standard Test Method for Flow Consistency of Controlled Low Strength Material
30. ASTM E11 Specification for Wire-Cloth Sieves for Testing Purposes.
31. ASTM E 119 Method for Fire Tests of Building Construction and Materials.

E. Any procedure, materials or operation specified by reference to the American Society for Testing and Materials (ASTM), the American Concrete Institute (ACI), Building Code or other references shall comply with the requirements of the current and most recent specifications or standards. In conflicts between listed standards and this specification, the more stringent requirements shall govern.

F. The Contractor is expected to obtain the most recent issue of all standards, recommendations, codes or specifications referred to within this specification.

1.04 SUBMITTALS

- A. The design mixes to be used shall be prepared by qualified persons and submitted for review. The design of the mix is the responsibility of the CONTRACTOR subject to the limitations of the specifications. Review processing of this submission will be required only as evidence the mix has been designed by qualified persons and that the minimum requirements of the specifications have been met. Such review will in no way alter the responsibility of the CONTRACTOR to furnish concrete meeting the requirements of the specifications. If in the progress of the work the sources of materials change in characteristics or the CONTRACTOR requests a new source in writing, the CONTRACTOR shall, at his expense submit new test data and information for the establishment of a new design mix. Submit mix designs for all classes of concrete to be used under this Contract. Mix design submittals shall include the following:
1. Sources of all materials and certifications of compliance with specifications for all sources of each material.
 2. Certified current (less than one year old) chemical analysis of Portland Cement or Blended Cement to be used.
 3. Certified current (less than one year old) chemical analysis of fly ash to be used.
 4. Manufacturer's data on all admixtures stating compliance with required standards and are compatible with one another. Written conformance to the above mentioned requirements and the chloride ion content of the admixture will be required from the admixture manufacturer prior to Mix design review by the ENGINEER.
 5. Field experience records and/or trial mix data for the proposed concrete mixes.
- B. Where ready-mix concrete is used, the CONTRACTOR shall provide delivery tickets at the time of delivery of each load of concrete. In addition to the information required by ASTM C94, each ticket shall show the mix number, cement content, water/cementitious ratio, and amount of water allowed to be added to truck without exceeding required water/cementitious ratio.
- C. A schedule of all concrete placement with volume of concrete planned to be placed each day.
- D. A layout of all structures with all planned construction joint locations.

1.05 QUALITY ASSURANCE

- A. Plant equipment and facilities shall meet all requirements of the Check List for Certification of Ready Mixed Concrete Production facilities of the National Ready Mixed Concrete Association and ASTM C 94.
- B. Tests for compressive strength and slump of concrete will be performed as specified herein. Test for determining slump will be in accordance with the requirements of ASTM C 143.

- C. The cost of initial trial mixes and initial laboratory tests to design the mixes including compression tests, sieve analysis, and tests on trial mixes shall be included in the Contract Price.
- D. The cost of all tests during construction will be borne by the CITY. However, the CONTRACTOR shall be charged for the cost of any additional tests and investigation on work performed which does not meet the Specifications. All test results shall be sent directly to the ENGINEER. The CONTRACTOR shall be responsible for coordination of all tests with the testing laboratory.
- E. Concrete for testing shall be supplied by the CONTRACTOR at no cost to the CITY, and the CONTRACTOR shall provide assistance to the ENGINEER in obtaining samples. The CONTRACTOR shall dispose of and clean up all excess material.
- F. Construction Tolerances
 - 1. The CONTRACTOR shall set and maintain concrete forms and perform finishing operations so as to ensure that the completed work is within the tolerances specified herein. Surface defects and irregularities are defined as finishes and are to be distinguished from tolerances. Tolerance is the specified permissible variation from lines, grades, or dimensions shown. Where tolerances are not stated in the Specifications, permissible deviations will be in accordance with ACI 347 and Section 03100 entitled "Concrete Formwork".

1.06 QUALITY CONTROL

A. Compressive Strength

- 1. Compression test specimens shall be taken during construction from the first placement of each class of concrete specified herein and at intervals thereafter as selected by the ENGINEER to insure continued compliance with these Specifications. At least one set of test specimens shall be made for each placement in excess of five cubic yards, or for each fifty (50) cubic yards of concrete placed, or for each 5000 square feet of surface area for slabs or walls, whichever is greater.
- 2. Samples of freshly mixed concrete shall be obtained in accordance with ASTM C 172, and compression test specimens for concrete shall be made in accordance with ASTM C 31. Specimens shall consist of at least five 6-inch diameter by 12-inch high cylinders, or eight 4-inch diameter by 8-inch high cylinders. Each cylinder shall be identified by a tag attached to the side of the cylinder.
- 3. The CONTRACTOR shall provide approved curing boxes for storage of cylinders on site. The insulated curing box shall be of sufficient size and strength to contain all the specimens made in any four consecutive working days and to protect the specimens from falling over, being jarred or otherwise disturbed during the period of initial curing. The box shall be erected, furnished and maintained by the CONTRACTOR. Such box shall be equipped to provide the moisture and to regulate the temperature necessary to maintain the proper curing conditions required by ASTM C31. Such box shall be located in an area free from vibration such as pile driving and traffic of all kinds. No concrete requiring inspection shall be delivered to the site until such storage curing box has been provided. Specimens

shall remain undisturbed in the curing box until ready for delivery to the testing laboratory but not less than sixteen hours

4. Compression test shall be performed in accordance with ASTM C 39. For 6x12 cylinders, two test cylinders will be tested at 7 days and 2 at 28 days. For 4x8 cylinders, three test cylinders will be tested at 7 days and three at 28 days. The remaining cylinders will be held to verify test results, if needed.

B. Consistency

1. Consistency of the concrete will be checked by the ENGINEER by standard slump cone tests. The CONTRACTOR shall make any necessary adjustments in the mix as the ENGINEER may direct and shall upon written order suspend all placing operations in the event the consistency does not meet the intent of the specifications. No payment shall be made for delays, material or labor costs due to such eventualities.
2. Slump tests shall be made in accordance with ASTM C 143. Slump tests shall be performed as deemed necessary by the ENGINEER and each time compressive strength samples are taken.

C. Air Content

1. Samples of freshly mixed concrete will be tested for entrained air content by the ENGINEER in accordance with ASTM C 231.
2. Air content tests will be performed as deemed necessary by the ENGINEER and each time compressive strength samples are taken.

D. Evaluation and Acceptance of Concrete

1. Evaluation and acceptance of the compressive strength of concrete shall be according to the requirements of ACI 215 and ACI 318, Chapter 5 "Concrete Quality Mixing and Placing", and as specified herein.
2. If any concrete fails to meet these requirements, immediate corrective action shall be taken to increase the compressive strength for all subsequent batches of the type of concrete affected.
3. All concrete which fails to meet the ACI requirements and these specifications, is subject to removal and replacement at the cost of the CONTRACTOR. Additional testing may also be required to verify compressive strength of concrete. Additional testing shall involve extraction and testing of concrete cores in accordance with ASTM C 42. ENGINEER shall determine locations where concrete cores shall be taken. Nondestructive test methods shall not be used to verify strength of in-place concrete.

1.07 PRE-CONCRETE CONFERENCE

- A. At least 35 days prior to start of the Concrete construction schedule, the CONTRACTOR shall conduct a meeting to review the proposed mix designs and to discuss the required

methods and procedures to achieve the required concrete construction. The CONTRACTOR shall send a pre-concrete conference agenda to all attendees 20 days prior to the scheduled date of the conference.

- B. The CONTRACTOR shall require responsible representatives of every party who is concerned with the concrete work to attend the conference, including but not limited to the following:
 - 1. CONTRACTOR's superintendent
 - 2. For the concrete design mix – Laboratory retained for trial batching and tests
 - 3. For field quality control – Concrete subcontractor, Concrete producer, Admixture Manufacturer(s), Concrete pumping contractor
- C. Minutes of the meeting shall be recorded, typed and printed by the CONTRACTOR and distributed by him to all parties concerned within five days of the meeting. One copy of the minutes shall also be transmitted to the ENGINEER.
- D. The minutes shall include a statement by the admixture manufacturer(s) indicating that the proposed mix design and placing techniques can produce the concrete quality required by these Specifications.
- E. The ENGINEER will be present at the conference. The CONTRACTOR shall notify the ENGINEER at least 20 days prior to the scheduled date of the conference.

PART 2 --PRODUCTS

2.01 CONCRETE MATERIALS

- A. Materials shall be delivered, stored, and handled so as to prevent damage by water or breakage. Only one brand of cement shall be used. Cement reclaimed from cleaning bags or leaking containers shall not be used. All cement shall be used in the sequence of receipt of shipments.
- B. All materials furnished and stored for the work shall comply with the requirements of ACI 301, as applicable.
- C. Materials for concrete shall conform to the following requirements:
 - 1. Cement shall be standard brand Portland cement conforming to ASTM C 150 for Type II. Portland cement shall contain not more than 0.60 percent alkalis. The term "alkalis" referred to herein is defined as the sum of the percentage of sodium oxide and 0.658 times the percentage of potassium oxide ($\text{Na}_2\text{O} + 0.658 \text{K}_2\text{O}$). These oxides shall be determined in accordance with ASTM C 114. A single brand of cement shall be used throughout the Work, and prior to its use, the brand shall be acceptable to the ENGINEER. The cement shall be suitably protected from exposure to moisture until used. Cement that has become lumpy shall not be used. Sacked cement shall be stored in such a manner so as to permit access for inspection and sampling. Certified mill test reports for each shipment of cement to be used shall be

submitted to the ENGINEER if requested regarding compliance with these Specifications. The proposed Portland cement shall not contain more than 8% tricalcium aluminate and more than 12% tetracalcium aluminoferrite.

2. Fly ash shall meet the requirements of ASTM C 618 for Class F, except the loss on ignition shall not exceed 4%. The fly ash constituent shall be maximum 15% of the total weight of the combined Portland cement and fly ash. For concrete to be used in environmental concrete structures, i.e. process structures or fluid containing structures, inclusion of fly ash in concrete mix is mandatory.
3. Water shall be potable, clean, and free from objectionable quantities of silty organic matter, alkali, salts and other impurities. The water shall be considered potable, for the purposes of this Section only, if it meets the requirements of the local governmental agencies.
4. Aggregates shall be obtained from pits acceptable to the ENGINEER, shall be non-reactive, and shall conform to the FBC and ASTM C 33. Maximum size of coarse aggregate shall be as specified in Article 2.04, Paragraph B of this Section. Lightweight sand for fine aggregate will not be permitted.
 - a. CONTRACTOR shall submit a new trial mix to the ENGINEER for approval whenever a different aggregate or gradation is proposed.
 - b. Coarse aggregates shall consist of clean, hard, durable gravel, crushed gravel, crushed rock or a combination thereof. The coarse aggregates shall be prepared and handled in two or more size groups for combined aggregates with a maximum size not greater than 1 inch. When the aggregates are proportioned for each batch of concrete the two size groups shall be combined.
 - c. Fine aggregates shall be manufactured sand that is hard and durable.
 - d. Combined aggregates shall be well graded from coarse to fine sizes, and shall be uniformly graded between screen sizes to produce a concrete that has optimum workability and consolidation characteristics. Where a trial batch is required for a mix design, the final combined aggregate gradations will be established during the trial batch process.
 - e. When tested in accordance with "Organic Impurities in Sands for Concrete" (ASTM C 40), the fine aggregate shall produce a color in the supernatant liquid no darker than the reference standard color solution.
 - f. When tested in accordance with "Resistance to Abrasion of Small size Coarse Aggregate by Use of the Los Angeles Machine" (ASTM C 131), the coarse aggregate shall show a loss not exceeding 42 percent after 500 revolutions, or 10.5 percent after 100 revolutions.
 - g. When tested in accordance with "Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate" (ASTM C 88), the loss resulting after five cycles shall not exceed 10 percent for fine or coarse aggregate when using sodium sulfate.

2.02 ADMIXTURES

- A. Air-entraining agent meeting the requirements of ASTM C 260, shall be used. Sufficient air-entraining agent shall be used to provide a total air content of 3 to 5 percent. Air-entraining agent shall be Sika AER by Sika Corp., MB-VR by Master Builders, Darex AEA by Grace, AEA-92S by Euclid Chemical Company, or equal.
- B. Admixtures shall be required at the ENGINEER's discretion or, if not required, may be added at the CONTRACTOR's option to control the set, effect water reduction, and increase workability. In either case, the addition of an admixture shall be at the CONTRACTOR's expense. The use of an admixture shall be subject to acceptance by the ENGINEER. Concrete containing an admixture shall be first placed at a location determined by the ENGINEER. If the use of an admixture is producing an inferior end result, the CONTRACTOR shall discontinue use of the admixture. Admixtures specified herein shall conform to the requirements of ASTM C 494. The required quantity of cement shall be used in the mix regardless of whether or not an admixture is used. Admixtures shall contain no free chloride ions, be non-toxic after 30 days, and shall be compatible with and made by the same manufacturer as the air entraining admixture.
1. Set controlling admixture shall be either with or without water-reducing properties. Where the air temperature at the time of placement is expected to be consistently over 80 degrees Fahrenheit, a set retarding admixture such as Sika Chemical Corporation's Plastiment, Pozzolith 200N by BASF, or equal shall be used. Where the air temperature at the time of placement is expected to be consistently under 40 degrees Fahrenheit, a non-chloride, non-corrosive set accelerating admixture such as Sika Chemical Corporation's Plastocrete 161FL, Pozzolith NC534 by BASF, or equal shall be used.
 2. Low range water reducer shall be added to all structural concrete, and shall conform to ASTM C 494, Type A. It shall be either a hydroxylated carboxylic acid type or a dydroxylated polymer type. The quantity of admixture used and the method of mixing shall be in accordance with the manufacturer's instructions and recommendations.
 3. Water reducing and retarding admixture shall be in conformance with ASTM C 494 Type D free of chlorides, "Pozzolith 200N" by BASF, "WRDA-64" by Grace or equal.
 4. High range water reducer shall be sulfonated polymer conforming to ASTM C 494, Type F or G. The high range water reducer 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 job site system. Concrete shall be mixed at mixing speed for a minimum of 100 mixer revolutions after the addition of the high range water reducer. Acceptable products are "Eucon 37" or Plastol 5000 by the Euclid Chemical Company, "Rheobuild 1000 or Glenium Series" by BASF, and "Daracem 100 or Advaflow Series" by W.R. Grace.
 5. The CONTRACTOR shall submit certification from each admixture manufacturer that all admixtures utilized in the design mix are compatible with one another and properly proportioned.

6. Prohibited Admixtures: Calcium chloride, thiocyanate or admixtures containing more than 0.05 percent chloride ions are not permitted.

2.03 ACCESSORIES

- A. Epoxy adhesives shall be the following products for the applications specified to be used in strict accordance with manufacturer's recommendations.
 1. For bonding freshly-mixed, plastic concrete to hardened concrete, Sikadur 32 Hi-Mod, LPL Epoxy Adhesive, as manufactured by Sika Chemical Corporation; Concrevis 1001-LPL, as manufactured by Adhesive Engineering Company; or equal.
 2. For bonding hardened concrete or masonry to steel, Colma-Dur Gel, Sikadur Hi-Mod Gel, or equal.

2.04 CONCRETE MIX

- A. Concrete shall be composed of cement, admixtures, aggregates and water. These materials shall be of the qualities specified. The exact proportions in which these materials shall be based on the results of field experience or laboratory trial mixes in conformance with Section 5.3 "Proportioning on the Basis of Field Experience and/or Laboratory Trial Mixtures" of ACI 318. 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. Mix designs with more than 41 percent of sand of the total weight of fine and coarse aggregate shall not be used for Class A1 and A2 Concrete. 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 at no additional cost to the CITY. All changes shall be subject to review by the ENGINEER.
- B. The proportions of cement, aggregates, admixtures and water used in the concrete shall be based on tests of grading and moisture content of materials, slump of concrete mixture, strength of concrete and the following factors:

1. Class A1 Concrete: Normal weight structural concrete to be used in all structures qualifying as environmental concrete structures that are designed in accordance with ACI 350 including pump stations, tanks, basins, process structures, and any structures containing fluids or process chemicals or other materials used in treatment process

Minimum cementitious materials content, per cubic yard	611 lbs.
Water-cementitious materials ratio, by weight	Maximum 0.42 Minimum 0.39

Slump range	3 inches to 4 inches with water reducing admixture
Coarse Aggregate	#57 per ASTM C33
Compressive strength at 28 days – F'c	4,500 psi
Air Content	3% ± 1%

2. Class A2 Concrete: Normal weight structural concrete to be used in walls of structures qualifying as environmental concrete structures as described above. Class A2 concrete is similar to Class A1 except that Class A2 shall contain a mandatory addition of high range water reducer.

Minimum cementitious materials content, per cubic yard	611 lbs.
Water-cementitious materials ratio, by weight	Maximum 0.42 Minimum 0.39
Slump range	3 inches maximum before addition of high range water reducing admixture 8 inches maximum after addition of high range water reducing admixture
Coarse Aggregate	#57 per ASTM C33
Compressive strength at 28 days – F'c	4,500 psi
Air Content	3% ± 1%

3. Class A3 Concrete: Normal weight structural concrete in all structures other than structures qualifying as environmental concrete structures as described above.

Minimum cementitious materials content, per cubic yard	611 lbs.
Water-cementitious materials ratio, by weight	Maximum 0.45 Minimum 0.39
Slump range	3 inches to 4 inches with water reducing admixture
Compressive strength at 28 days - F'c	4,000 psi
Coarse Aggregate	#57 per ASTM C33

Air Content 3% ± 1%

4. Class B Concrete: Normal weight structural concrete with pea-rock aggregate. Class B concrete shall be used only at locations indicated on the Drawings or approved on a case by case basis by the Engineer.

Minimum cementitious materials content, per cubic yard 517 lbs.

Water-cementitious materials ratio, by weight Maximum 0.50
Minimum 0.39

Slump, maximum 5 inches

Compressive strength at 28 days - F'c 4,000 psi

Coarse Aggregate Pearock

Air Content 3% ± 1%

5. Class C Concrete: Normal weight structural concrete used in duct bank encasements, catch basins, fence and guard post embedment, concrete fill, sidewalks, and other areas where specifically noted on the Contract Drawings

Minimum cementitious materials content, per cubic yard 500 lbs.

Water-cementitious materials ratio, by weight Maximum 0.60

Slump, maximum 5 inches

Compressive strength at 28 days - F'c 3,000 psi

Coarse Aggregate #57 per ASTM C33

Air Content 3% ± 1%

6. Flowable Fill (In lieu of pipe bedding, select backfill)

Minimum cementitious materials content, per cubic yard 100 lbs.

Water-cementitious materials ratio, by weight Maximum 5.0

Flowability, minimum 8 inches

Compressive strength at 28 days - F'c 50-150 psi

Coarse aggregate	none
Fine aggregate	limestone screenings

- C. All Class A1, A2, A3 concrete, unless noted otherwise on the Drawings, shall be air entrained concrete. A water reducing admixture may be added to the mix at the CONTRACTOR's option.
- D. The mix proportions used shall be changed subject to the limitation specified herein, 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.

2.05 CONSISTENCY

- A. The quantity of water entering into 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 the vibratory methods herein specified 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 C 143.

2.06 READY-MIXED CONCRETE

- A. Ready-mixed concrete shall be used meeting the requirements as to materials, batching, mixing, transporting, and placing as specified herein and in accordance with ASTM C 94.
- B. Ready-mixed concrete shall be delivered to the site of the work, and discharge shall be completed within one and one-half hour after the addition of the cement to the aggregates or before the drum has been revolved 250 revolutions, whichever is first. Upon delivery from the truck concrete temperature shall not exceed 90 degrees Fahrenheit.
- C. 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. The counters shall be actuated at the time of starting mixers at mixing speeds.
- D. 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.

PART 3 -- EXECUTION

3.01 PROPORTIONING AND MIXING

- A. Proportioning of the concrete mix shall be based on the results of field experience or laboratory trial mixes in conformance with Section 5.3, "Proportioning on the Basis of Field Experience and/of Trial Mixtures" of ACI 318. When trial mixes are used they shall conform to the requirements of Chapter 3 "Proportioning" of ACI 301; provided, that the maximum slump for any concrete shall not exceed the limits specified in this Section of the Specifications.
- B. When field experience records are inadequate to confirm the quality of a proposed concrete mix in accordance with Section 5.3, "Proportioning on the Basis of Field Experience and/or Trial Mixtures" of ACI 318, or when required by the ENGINEER, an independent testing laboratory designated by the CONTRACTOR and acceptable to the ENGINEER shall test a trial batch of each of the preliminary concrete mixes submitted by the CONTRACTOR. The trial batches shall be prepared using the aggregates, cement and admixtures proposed for the project. The trial batch materials shall be of a quantity such that the testing laboratory can obtain enough samples to satisfy requirements stated below. Tests on individual materials stated in PART 2 -- PRODUCTS should already be performed before any trial mix is done. The cost of laboratory trial batch tests for each specified concrete mix will be borne by the CONTRACTOR and the CONTRACTOR shall furnish and deliver the materials to the testing laboratory at no cost to the CITY.
- C. An independent testing laboratory shall observe the preparation of the trial batch, and they shall prepare a minimum of fifteen (15) standard test cylinders in accordance with ASTM C 31 in addition to conducting slump (ASTM C 143), air content (C 231) and unit weight (C 138) tests. Compressive strength test on the cylinders shall subsequently be performed by the same laboratory in accordance with ASTM C 39 as follows: Test 3 cylinders at age 7 days; test 3 cylinders at age 21 days; test 3 cylinders at age 28 days and test 3 cylinders at 56 days. The cylinders shall be carefully identified as "Trial Mix, Contract No. _____, Product _____." If the average 28-day compressive strength of the trial mix is less than that specified, or if any single cylinder falls below the required strength by more than 500 psi, the mix shall be corrected, another trial batch prepared, test cylinders taken, and new tests performed as before. Any such additional trial batch testing required shall be performed at no additional cost to the CITY. Adjustments to the mix shall be considered refinements to the mix design and shall not be the basis for extra compensation to the CONTRACTOR.
- D. Mixing of concrete shall conform to the requirements of Chapter 4 of ACI 301 Specifications.
- E. Retempering of concrete or mortar which has partially hardened will not be permitted.

3.02 PREPARATION

- A. 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. A vapor barrier specified in Section 07190 entitled "Vapor Barrier" shall be placed. The surface shall be free from standing water, mud, and debris at the time of placing concrete.

- B. No concrete shall be placed until the reinforcement steel and formwork have been erected in a manner acceptable to the ENGINEER. The CONTRACTOR shall notify the ENGINEER not less than two working days prior to Concrete Placement, allowing one day for review and any corrective measures which are required.
- C. Joints in Concrete
 - 1. Concrete surfaces upon or against which concrete is to be placed shall be given a roughened surface for good bond and a bonding agent shall be placed.
 - 2. After the surfaces have been prepared all approximately horizontal construction joints shall be covered with a layer of mortar approximately one-inch thick. The mortar shall have the same proportions of cement and sand as the regular concrete mixture. The water-cement ratio of the mortar in place shall not exceed that of the concrete to be placed upon it, and the consistency of the mortar shall be suitable for placing and working in the manner hereinafter specified. The mortar shall be spread uniformly and shall be worked thoroughly into all irregularities of the surface. Wire brooms shall be used where possible to scrub the mortar into the surface. Concrete shall be placed immediately upon the fresh mortar.
- D. Placing Interruptions
 - 1. 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 ENGINEER. Cold joints will be sufficient cause for rejection of the work.
- E. Embedded Items
 - 1. No concrete shall be placed until all formwork, installation of parts to be embedded, reinforcing steel, and preparation of surfaces involved in the placing have been completed and accepted by the ENGINEER at least four hours before placement of concrete. All surfaces of forms and embedded items that have become encrusted with dried grout from concrete previously placed shall be cleaned of all such grout before the surrounding or adjacent concrete is placed.
 - 2. All inserts or other embedded items shall conform to the requirements herein.
- F. All reinforcement, anchor bolts, sleeves, inserts, and similar items shall be set and secured in the forms where shown on the Drawings or by shop drawings and shall be acceptable to the ENGINEER before any concrete is placed. Accuracy of placement is the responsibility of the CONTRACTOR.
- G. All anchor bolts called for on the drawings shall be cast-in-place in the concrete. Drilled, impact, adhesive or other types of anchors shall not be substituted for anchor bolts unless otherwise shown on the Drawings. Anchor bolts shall conform to the requirements set forth in Section 05050 entitled "Metal Fastening".

H. Casting New Concrete Against Old

1. Where concrete is to be cast 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 sand-blasting (exposing aggregate) prior to the application of an epoxy bonding agent.

- I. 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, except where shown on the Drawings to be placed by the tremie method, 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, will be subject to the review of the ENGINEER.

J. Corrosion Protection

1. 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.

2. Openings for pipes, inserts for pipe hangers and brackets, and the setting of anchors shall, where practicable, be provided for during the placing of concrete.

3. Anchor bolts shall be accurately set, and shall be maintained in position by templates while being embedded in concrete.

4. The surfaces of all 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 PLACING CONCRETE

- A. Placing of concrete shall conform to the applicable requirements of Chapter 8 of ACI 301 and the requirements of this Section.

B. Non-Conforming Work or Materials

1. Concrete which upon or before placing is found not to conform to the requirements specified 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 by and at the expense of the CONTRACTOR.

C. Unauthorized Placement

1. No concrete shall be placed except in the presence of duly authorized representative

of the ENGINEER. The CONTRACTOR shall notify the ENGINEER at least 24 hours in advance of placement of any concrete.

D. Placement in Wall Forms

1. Concrete shall not be dropped through reinforcement steel or into any deep form, whether reinforcement is present or not, causing separation of the coarse aggregate from the mortar on account of repeatedly hitting rods or the sides of the form as it falls, 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, some means such as the use of 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. In no case shall the free fall of concrete exceed 4 feet below the ends of ducts, chutes, or buggies.
2. 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 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 forms shall not exceed 5 feet of vertical rise per hour.

E. Casting New Concrete Against Old

1. An epoxy adhesive bonding agent shall be applied to set surfaces of construction joints according to the manufacturer's written recommendations.

F. Conveyor Belts and Chutes

1. All ends of chutes, hopper gates, and all other points of concrete discharge throughout the CONTRACTOR's conveying, hoisting and placing system shall be so designed and arranged 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 ENGINEER. Chutes longer than 50 feet will not be permitted. Minimum slopes of chutes shall be such that concrete of the specified 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. 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. Placement in Slabs

1. Concrete placed in sloping slabs shall proceed uniformly from the bottom of the slab to the top, for the full width of the pour. 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.

H. Temperature of Concrete

1. The temperature of concrete when it is being placed shall be not more than 90 degrees F. 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 specified minimum temperature. If concrete is placed when the weather is such that the temperature of the concrete would exceed 90 degrees Fahrenheit, the CONTRACTOR shall employ effective means, such as precooling of aggregates and mixing water using ice or placing at night, as necessary to maintain the temperature of the concrete, as it is placed, below 90 degrees F. The CONTRACTOR shall be entitled to no additional compensation on account of the foregoing requirements. During summer months concrete pours shall be scheduled in the morning or early part of the day when temperatures are cooler.

I. Pumping Equipment

1. Pumping equipment and procedures if used shall conform to the recommendations contained in the report of ACI Committee 304 on Placing Concrete by Pumping Methods, ACI 304.2R. The specified slump shall be measured at the point of discharge. The loss of slump in pumping shall not exceed 1-1/2 inches.

- J. The order of placing concrete in all parts of the work shall be acceptable to the ENGINEER. In order to minimize the effects of shrinkage, the concrete shall be placed in units as bounded by construction joints shown on the Drawings. The placing of units shall be done by placing alternate units in a manner such that each unit placed shall have cured at least 7 days before the contiguous unit or units are placed, except that the corner sections of vertical walls shall not be placed until the 2 adjacent wall panels have cured at least 14 days.

- K. The surface of the concrete shall be level whenever a run of concrete is stopped. To ensure 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 all laitance shall be removed.

- L. 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 during placement. Vibrators shall be high speed power vibrators (8000 to 10,000 rpm) of an immersion type in sufficient number and with (at least one) standby units as required.

- M. 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 all 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.

- N. Concrete in walls shall be internally vibrated and at the same time, 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 as specified. Vibrators shall be provided in sufficient numbers, with standby units as required, to accomplish the results herein specified within 15 minutes after concrete of the prescribed consistency is placed in the forms. The vibrating head shall be kept from contact with 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.

3.04 CONCRETE FINISHING

- A. Concrete finishes are specified in Section 03350 entitled "Concrete Finishes".

3.05 CURING AND PROTECTION

- A. Curing is specified in Section 03370 entitled "Concrete Curing".

3.06 PLACING CONCRETE UNDERWATER (TREMIE CONCRETE)

- A. Placing concrete underwater will be permitted only when shown on the Drawings. Concrete deposited under water shall be carefully placed in a compacted mass in final position by means of a tremie, a closed bottom dump bucket or other approved method. Care must be exercised to maintain still water at the point of deposit. Concrete shall not be placed in running water. The consistency of the concrete shall be regulated to prevent segregation of materials. The method of depositing concrete shall be regulated such that the concrete enters the mass of the previously place concrete from within, displacing water with a minimum disturbance to the surface of the concrete.

- B. Tremie shall consist of a tube having a diameter of not less than 10 inches and constructed in sections having flanged couplings fitted with gaskets. The tremie shall be supported to permit free movement of the discharge and over the entire top surface of the work and shall permit rapid lowering when necessary to choke off or retard the flow. The discharge end shall be entirely sealed at all times and the tremie tube kept full to the bottom of the hopper. When a batch is dumped into the hopper, the tremie shall be slightly raised, but not out of the concrete at the bottom, until the batch discharges to the bottom of the hopper. The flow shall then be stopped by lowering the tremie. The flow shall be continuous until the placement has been completed.

3.07 PLACING CONCRETE UNDER PRESSURE (PUMPING)

- A. Where concrete is conveyed and placed by mechanically applied pressure, the equipment shall have the capacity for the operation. The operation of the pump shall be such that a continuous stream of concrete without air pockets is produced. To obtain the least line resistance, the layout of the pipeline system shall contain a minimum number of bends with no change in pipe size. If two sizes of pipe must be used, the smaller diameter should be used at the pump end and the larger at the discharge end. When pumping is completed, the concrete remaining in the pipelines, if it is to be used, shall be ejected in such a manner that there will be no contamination of the concrete or separation of the ingredients.

- B. No aluminum parts shall be in contact with the concrete during the entire placing of concrete under pressure at any time.
- C. Prior to placing concrete under pressure, the CONTRACTOR shall submit the concrete mix design together with test results from a recognized testing laboratory proving the proposed mix meets all requirements. In addition, at the CONTRACTOR's option, an actual pumping test under field conditions may be performed prior to use of the accepted mix. This test requires a duplication of anticipated site conditions from beginning to end. The batching and truck mixing shall be the same as will be used; the same pump and operator shall be present and the pipe and pipe layouts will reflect the maximum height and distance contemplated.
- D. 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.
- E. The pumping equipment must have two cylinders and be designed to operate with one cylinder only 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.
- F. The minimum diameter of the hose (conduits) shall be four inches.
- G. Pumping equipment and hoses (conduits) that are not functioning properly shall be replaced.

3.08 ORDER OF PLACING CONCRETE

- A. In order to minimize the effects of shrinkage, the concrete shall be placed in units as bounded by construction joints shown on the Drawings and maximum lengths as indicated on Drawings. The placing of units shall be done by placing alternate units in a manner such that each unit placed shall be have cured at least seven days before the contiguous unit or units are placed, except that the corner sections of vertical walls shall not be placed until the two adjacent wall panels have cured at least 14 days.
- B. The surface of the concrete shall be level whenever a run of concrete is stopped.

3.09 CONCRETE IN COLD WEATHER

- A. Cold weather concreting procedures shall be in accordance with the requirements of ACI 306

3.10 CONCRETE IN HOT WEATHER

- A. Hot weather concreting procedures shall conform to the requirement of ACI 305.

3.11 CARE AND REPAIR OF CONCRETE

- A. The Contractor shall protect all concrete against injury or damage from excessive heat, lack of moisture, overstress, or any other cause until final acceptance by the Owner. 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 at the Contractor's expense.

- B. As soon as forms are removed, all exposed surfaces shall be carefully examined and Contractor shall immediately notify the Engineer. Plastering or coating of surfaces to be smoothed will not be permitted. No repairs shall be made until reviewed by the Engineer. In no case will extensive patching of honeycombed concrete be permitted.
- C. Concrete containing minor voids, holes, honeycombing, or similar depression defects shall have them repaired as directed. Concrete containing extensive voids, holes, honeycombing, or similar depression defects, shall be completely removed and replaced. All repairs and replacements herein specified shall be promptly executed by the Contractor at its own expense.
- D. Holes left by tie-rod cones shall be repaired in an acceptable manner with dry-packed cement grout or premixed patching material as accepted by the Engineer.
- E. Areas of concrete in which cracking, spalling, or other signs of deterioration develop prior to final acceptance shall be removed and replaced or repaired as directed. This stipulation includes concrete that has experienced cracking due to drying or thermal shrinkage of the concrete. Structural cracks shall be repaired using an approved epoxy injection system. Non-structural cracks shall be repaired using an approved hydrophilic resin pressure injected grout system, unless other means of repair are deemed necessary and approved. All repair work shall be performed at no additional cost to the Owner.
- F. Concrete which fails to meet the strength requirements as outlined in Article 2.04, paragraph B, will be analyzed as to its adequacy based upon loading conditions, resultant stresses and exposure conditions for the particular area of concrete in question. If the concrete in question is found unacceptable based upon this analysis, that portion of the structure shall be strengthened or replaced by the Contractor at no additional cost to the Owner. The method of strengthening or extent of replacement shall be as directed by the Engineer.

3.12 CONCRETE SEALER

- A. Contractor shall apply a sealer to the top surface of all finished concrete floor slabs and equipment pads which are to remain unpainted and not intended to be immersed unless stated otherwise. Sealer shall be as specified in Specification Section 03350 entitled "Concrete Finishes".

- END OF SECTION -

SECTION 03315 - GROUT

PART 1 -- GENERAL

1.01 THE REQUIREMENT

- A. The CONTRACTOR shall furnish all materials for grout in accordance with the provisions of this Section and shall form, mix place, cure, repair, finish, and do all other Work as required to produce finished grout, all in accordance with the requirements of the Contract Documents.

1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Section 01300 - Submittals
- B. Section 03300 - Cast-in-Place Concrete

1.03 REFERENCE SPECIFICATIONS, CODES, AND STANDARDS

- A. Specifications, codes, and standards shall be as specified in Section 03300 entitled "Cast-in-Place Concrete," and as referred to herein.
- B. Additional Commercial Standards

CRD-C 621 Corps of Engineers Specification for Nonshrink Grout

1.04 SUBMITTALS

- A. The CONTRACTOR shall submit certified test results verifying the compressive strength, shrinkage, and expansion requirements specified herein; and manufacturer's literature containing instructions and recommendations on the mixing, handling, placement and appropriate uses for each type of grout used in the work.

PART 2 -- PRODUCTS

2.01 PREPACKAGED NON-SHRINK CEMENTITIOUS GROUT

- A. Nonshrink grout shall be a prepackaged, inorganic, non-gas liberating, nonmetallic, cement-based grout requiring only the addition of water. 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 nonshrink grout specified herein shall be that recommended by the manufacturer for the particular application.
- B. Nonshrink grouts shall have a minimum 28 day compressive strength of 5000 psi (ASTM C109, restrained), shall have no shrinkage (0.0 percent) and a maximum 4.0 percent expansion in the plastic state when tested in accordance with ASTM C 827, and shall have no shrinkage (0.0 percent) and a maximum of 0.2 percent expansion in the hardened state when tested in accordance with CRD C 621.

- C. Cement based grout shall be Five Star Grout as manufactured by Five Star Products, Inc., Fairfield, Connecticut, or equal.
- D. Cementitious non-shrink grout shall be used at locations where there are no dynamic loads, the grout will not come in contact with wastewater or wastewater gases, and where non-shrink grout is identified on the Drawings. Applications include, but are not limited to, structural steel column base plates, gate frames and guides, and precast concrete to cast-in-place concrete joints.

2.02 PREPACKAGED NON-SHRINK EPOXY GROUT

- A. Epoxy-based non-shrink grout shall be a three component, 100 percent solids, solvent-free system designed for machinery grouting. Applications include, but are not limited to, anchoring, pump and motor bases, and any other equipment imparting dynamic loads to the support system.
- B. When non-shrink grout is identified on the Drawings in submerged (water or wastewater) or under wastewater gas environment, epoxy-based non-shrink grouts shall be used.
- C. The epoxy grout shall be delivered to site as prepackaged, three-component systems composing of the resin, hardener, and specially blended aggregates. The components shall be stored as recommended by the manufacturer until use.
- D. Non-shrink epoxy grout shall be Five Star DP Epoxy Grout by Five Star Products, Inc., Fairfield, Connecticut, or equal.

2.03 CEMENT GROUT

- A. Cement grout shall be composed of portland cement sand in the proportion specified in the Contract Documents and the minimum amount of water necessary to obtain the desired consistency. If no proportion is indicated, cement grout shall consist of one part portland cement to three parts sand. Water amount shall be as required to achieve desired consistency without compromising strength requirements. White portland cement shall be mixed with portland cement as required to match color of adjacent concrete.
- B. The minimum compressive strength at 28 days shall be 4000 psi.
- C. For beds thicker than 1-1/2 inch and/or where free passage of grout will not be obstructed by coarse aggregate, 1-1/2 parts of coarse aggregate having a top size of 3/8 inch should be added.
- D. Sand shall conform to the requirements of ASTM C144.

2.04 DOWEL/ANCHOR BOLT ADHESIVE SYSTEM

- A. When rebar or anchor bolts are specified to be drilled in and grouted on the Drawings, an adhesive system specified in Section 03200 entitled "Concrete Reinforcement" shall be used for dowels and an adhesive system specified in Section 05050 entitled "Metal Fastening" shall be used for anchor bolts.

2.05 CURING MATERIALS

- A. Curing materials shall be as recommended by the manufacturer.

2.06 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 the above described consistency; the type of grout to be used shall be as specified herein for the particular application.

2.05 MEASUREMENT OF INGREDIENTS

- A. Prepackaged grouts shall have ingredients measured by means recommended by the manufacturer.

PART 3 -- EXECUTION

3.01 GENERAL

- A. All curing, and protection of cement grout shall be as specified in Section 03370 entitled "Concrete Curing" (Methods 1 and 2); or as recommended by manufacturer. The finish of the grout surface shall match that of the adjacent concrete.
- B. All mixing, surface preparation, handling, placing, consolidation, and other means of execution for prepackaged grouts shall be done according to the instructions and recommendations of the manufacturer.

3.02 CONSOLIDATION

- A. Grout shall be placed in such a manner, for the consistency necessary for each application, so as to assure that the space to be grouted is completely filled.

3.03 CURING

- A. Pre-packaged grout shall be cured as recommended by the grout manufacturer. Cement grout shall be cured by application of mist for four (4) days.

- END OF SECTION -

DIVISION 4 – MASONRY

NOT USED

DIVISION 5 – METALS

SECTION 05010 - METAL MATERIALS

PART 1 -- GENERAL

1.01 THE REQUIREMENT

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

1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Materials for fasteners are included in Section 05050 entitled "Metal Fastening".
- B. Requirements for specific products made from the materials specified herein are included in other sections of the Specifications. See the section for the specific item in question.

1.03 REFERENCE SPECIFICATIONS, CODES AND STANDARDS

- A. ASTM A36 Standard Specification for Structural Steel
- B. ASTM A47 Standard Specification for Malleable Iron Castings
- C. ASTM A48 Standard Specification for Gray Iron Castings
- D. ASTM A53 Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated Welded and Seamless
- E. ASTM A167 Standard Specification for Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip
- F. ASTM A276 Standard Specification for Stainless and Heat-Resisting Steel Bars and Shapes
- G. ASTM A307 Standard Specification for Carbon Steel Externally Threaded Standard Fasteners
- H. ASTM A446 Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process, Structural (Physical) quality
- I. ASTM A500 Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes
- J. ASTM A501 Standard Specification for Hot-Formed Welded and Seamless Carbon Steel Structural Tubing
- K. ASTM A529 Standard Specification for Structural Steel with 42 000 psi (290 Mpa) Minimum Yield Point (1/2 in. (12.7 mm) Maximum Thickness)

- L. ASTM A536 Standard Specification for Ductile Iron Castings
- M. ASTM A570 Standard Specification for Hot-Rolled Carbon Steel Sheet and Strip, Structural Quality
- N. ASTM A572/A572M-94C Standard Specification for High Strength Low-Alloy Columbium-Vanadium Structural Steel Grade 50
- O. ASTM A666 Standard Specification for Austenitic Stainless Steel, Sheet, Strip, Plate, and Flat Bar for Structural Applications
- P. ASTM B26 Standard Specification for Aluminum-Alloy Sand Castings
- Q. ASTM B85 Standard Specification for Aluminum-Alloy Die Castings
- R. ASTM B108 Standard Specification for Aluminum-Alloy Permanent Mold Castings
- S. ASTM B138 Standard Specification for Manganese Bronze Rod, Bar, and Shapes
- T. ASTM B209 Standard Specification for Aluminum-Alloy Sheet and Plate
- U. ASTM B221 Standard Specification for Aluminum-Alloy Extruded Bars, Rods, Wire, Shapes, and Tubes
- V. ASTM B308 Standard Specification for Aluminum-Alloy Standard Structural Shapes, Rolled or Extruded
- W. ASTM B574 Standard Specification for Nickel-Molybdenum-Chromium Alloy Rod
- X. ASTM F468 Standard Specification for Nonferrous Bolts, Hex Cap Screws, and Studs for General Use

1.04 SUBMITTALS

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

1.05 QUALITY ASSURANCE

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

PART 2 -- PRODUCTS

2.01 CARBON AND LOW ALLOY STEEL

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

- | | |
|---|-------------------------------------|
| 1. Structural W Shapes | A 992 (50 ksi) |
| 2. Structural S, M, C, L Shapes | A 36 (36 ksi) |
| 3. Structural HP Shape | A 572, Grade 50 (50 ksi) |
| 4. Structural Tubing | A 500, Grade B or A 501 (42 ksi) |
| 5. Structural Pipe | A 53, Type E or S, Grade B (35 ksi) |
| 6. Plates and Bars | A 36 U.N.O. (36 ksi) |
| 7. Sheet Steel | A 570, Grade C |
| 8. Cold-Formed Structural Studs and Joists
(18-22 gauge) | A 446, Grade C |
| 8. Cold-Formed Structural Studs and Joists
(12-16 gauge) | A 446, Grade D |

2.02 STAINLESS STEEL

A. All stainless steel fabrications shall be Type 316.

B. Material types and ASTM designations are listed below:

- | | |
|----------------------|---------------------------|
| 1. Plates and Sheets | ASTM A167 or A666 Grade A |
| 2. Structural Shapes | ASTM A276 |

2.03 ALUMINUM

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

B. Material types and ASTM designations are listed below:

- | | |
|----------------------|------------------------|
| 1. Structural Shapes | ASTM B308 |
| 2. Castings | ASTM B26, B85, or B108 |
| 3. Extruded Bars | ASTM B221 - Alloy 6061 |

- 4. Extruded Rods, Shapes and Tubes ASTM B221 - Alloy 6063
- 5. Plates ASTM B209 - Alloy 6061
- 6. Sheets ASTM B221 - Alloy 3003

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

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

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

2.04 CAST IRON

A. Material types and ASTM designations are listed below:

- 1. Gray ASTM A48 Class 30B
- 2. Malleable ASTM A47
- 3. Ductile ASTM A536 Grade 60-40-18

2.05 BRONZE

A. Material types and ASTM designations are listed below:

- 1. Rods, Bars and Sheets ASTM B138 - Alloy B Soft

2.06 HASTELLOY

A. All Hastelloy shall be Alloy C-276.

PART 3 -- EXECUTION

(NOT USED)

- END OF SECTION -

SECTION 05050 - METAL FASTENING

PART 1 -- GENERAL

1.01 THE REQUIREMENT

- A. The CONTRACTOR shall furnish all materials, labor, and equipment required to provide all metal welds and fasteners not otherwise specified, in accordance with the Contract Documents.

1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Section 05010 - Metal Materials

1.03 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. Florida Building Code
2. AC 193 Acceptance Criteria for Mechanical Anchors in Concrete Elements
3. AC 308 Acceptance Criteria for Post-Installed Adhesive Anchors in Concrete Elements
4. ACI 318 Building Code Requirements for Structural Concrete
5. ACI 355.2 Qualifications of Post-Installed Mechanical Anchors in Concrete
6. AISC 348 The 2009 RCSC Specification for Structural Joints
7. AISC Specification for Structural Joints Using ASTM A325 or A490 Bolts.
8. AISC Code of Standard Practice
9. AWS D1.1 Structural Welding Code - Steel
10. AWS D1.2 Structural Welding Code – Aluminum
11. AWS D1.6 Structural Welding Code – Stainless Steel
12. Aluminum Association Specifications for Aluminum Structures

- | | | |
|-----|---------------------|---|
| 13. | ASTM A572/A572M-94C | Standard Specification for High Strength Low-Alloy Columbium-Vanadium Structural Steel Grade 50 |
| 14. | ASTM A36 | Standard Specification for Carbon Structural Steel |
| 15. | ASTM A307 | Standard Specification for Carbon Steel Externally Threaded Standard Fasteners |
| 16. | ASTM A325 | Standard Specification for High-Strength Bolts for Structural Steel Joints |
| 17. | ASTM E488 | Standard Test Methods for Strength of Anchors in Concrete and Masonry Elements |
| 18. | ASTM F436 | Standard Specification for Hardened Steel Washers |
| 19. | ASTM A489 | Standard Specification for Eyebolts |
| 20. | ASTM A490 | Standard Specification for Quenched and Tempered Alloy Steel Bolts for Structural Steel Joints |
| 21. | ASTM A563 | Standard Specifications for Carbon and Alloy Steel Nuts |
| 22. | ASTM F593 | Standard Specification for Stainless Steel Bolts; Hex Cap Screws, and Studs |
| 23. | ASTM F594 | Standard Specification for Stainless Steel Nuts |
| 24. | ASTM D1785 | Standard Specification for Polyvinyl Chloride (PVC) Plastic Pipe |
| 25. | ASTM F1554 | Standard Specification for Anchor Bolts, Steel, 36, 55, and 105-ksi Yield Strength |

1.04 SUBMITTALS

- A. Submit the following items in accordance with Section 01300 entitled "Submittals":
1. Shop Drawings providing the fastener's manufacturer and type and certification of the fastener's material and capacity.
 2. Anchor design calculations sealed by a Professional Engineer currently registered in the State of Florida. Only required if design not shown on Contract Drawings.
 3. Manufacturer's installation instructions.
 4. Welder certifications for each person who is to perform field welding. Certifications shall be from a recognized testing laboratory.

5. Certified weld inspection reports, when required.
6. Welding procedures.
7. Installer qualifications of post-installed anchors
8. Certification of Installer Training
9. Inspection Reports
10. Results of Anchor Proof Testing
11. For outdoor equipment, anchorage calculations to resist design wind loads, signed and sealed by a Professional Engineer registered in the State of Florida.

1.05 QUALITY ASSURANCE

- A. Fasteners not manufactured in the United States shall be tested and certification provided with respect to specified quality and strength standards. Certifications of origin shall be submitted for all U.S. fasteners supplied on the project.
- B. Installer Qualifications: All concrete anchors shall be installed by an Installer with at least three years of experience performing similar installations. Installer shall be certified as an Adhesive Anchor Installer in accordance with ACI-CRSI Adhesive Anchor Installation Certification Program.
- C. Installer Training: For concrete adhesive anchors, conduct a thorough training with the manufacturer or the manufacturer's representative for the Installer on the project. Training shall consist of a review of the complete installation process for drilled-in anchors, to include but not be limited to the following:
 1. Hole drilling procedure.
 2. Hole preparation and cleaning technique.
 3. Adhesive injection technique and dispenser training/maintenance.
 4. Rebar doweling preparation and installation.
 5. Proof loading/torquing.
- D. All steel welding shall be performed by welders certified in accordance with AWS D1.1. All aluminum welding shall be performed by welders certified in accordance with AWS D1.2. All stainless steel welding shall be performed by welders certified in accordance with AWS D1.6. Certifications of field welders shall be submitted prior to performing any field welds.
- E. Welds and high strength bolts used in connections of structural steel will be visually inspected in accordance with Article 3.04 of this Section.

- F. The CITY may engage an independent testing agency to perform testing of welded connections and to prepare test reports in accordance with AWS. Inadequate welds shall be corrected or redone and retested to the satisfaction of the ENGINEER and/or an acceptable independent testing laboratory, at no additional cost to the CITY.
- G. Provide a welding procedure for each type and thickness of weld. For welds that are not prequalified, include a Performance Qualification Report. The welding procedure shall be given to each welder performing the weld. The welding procedure shall follow the format in Annex E of AWS D1.1 with relevant information presented.
- H. Inspections of the adhesive dowel system shall be made by the Engineer or other representatives of the Owner in accordance with the requirements of the ESR published by the manufacturer. Provide adequate time and access for inspections of products and anchor holes prior to injections, installation, and proof testing.

PART 2 -- PRODUCTS

2.01 ANCHOR RODS (ANCHOR BOLTS)

- A. For all conditions throughout this Contract, all anchor bolts shall be Type 316 stainless steel conforming to ASTM F-593 unless noted otherwise.
- B. Nuts shall conform to ASTM F-594, alloy 316.
- C. Where anchor rods are used to anchor galvanized steel or are otherwise specified to be galvanized, anchor rods and nuts shall be hot-dip galvanized in accordance with ASTM F1554.
- D. Where pipe sleeves around anchor rods are shown on the Drawings, pipe sleeves shall be cut from Schedule 80 PVC plastic piping meeting the requirements of ASTM D1785, unless noted otherwise.
- E. Equipment manufacturers, fabricators, and suppliers shall design and furnish anchor bolts as required to install the supplied units. The anchor bolt layout shall be coordinated with concrete work as specified herein.
- F. Drilled in type anchor bolts, either adhesive types or mechanical types shall not be used unless approved in writing by the manufacturer/fabricator of equipment or covers, subject to acceptance by the ENGINEER. All operating pieces of equipment such as pumps, generators, motors etc. shall not be anchored with wedge anchors or other mechanical anchors. Drilled in type anchor bolts shall be Type 316 stainless steel. Drilled in type anchor bolts are specified under Article 2.04 of this Section entitled "Concrete Anchors".

2.02 HIGH STRENGTH BOLTS

- A. High strength bolts and associated nuts and washers shall be in accordance with ASTM A325 or ASTM A490. Bolts, nuts and washers shall meet the requirements of AISC "Specification for Structural Joints Using ASTM A325 or A490 Bolts".

- B. Where high strength bolts are used to connect galvanized steel or are otherwise specified to be galvanized, bolts, nuts, and washers shall be hot-dip galvanized in accordance with ASTM A325.

2.03 STAINLESS STEEL BOLTS

- A. Stainless steel bolts shall conform to ASTM F-593. All underwater fasteners shall be Type 316 stainless steel. Unless otherwise specified, fasteners for aluminum and stainless steel members shall be Type 316 stainless steel.
- B. Stainless steel bolts shall have hexagonal heads with a raised letter or symbol on the bolts indicating the manufacturer, and shall be supplied with hexagonal nuts meeting the requirements of ASTM F594. Nuts shall be of the same alloy as the bolts.

2.04 CONCRETE ANCHORS

A. General

1. Where concrete anchors are called for on the Drawings, one of the types listed below shall be used; except, where one of the types listed below is specifically called for on the Drawings, only that type shall be used. Unless otherwise noted, all concrete anchors which are submerged, or are used in hanging items or have direct tension induced upon them, or which are subject to vibration from equipment such as pumps and generators, shall be adhesive anchors. The determination of anchors equivalent to those listed below shall be on the basis of test data performed by an approved independent testing laboratory. There are two types used:
 - a. Expansion anchors shall be mechanical anchors of the wedge, sleeve, drop-in or undercut type.
 - b. Adhesive anchors shall consist of threaded rods or bolts anchored with an adhesive system into hardened concrete. Adhesive anchors shall be two part injection type using the manufacturer's static mixing nozzle and shall be supplied as an entire system.
2. Expansion anchors shall not be used to hang items from above or in any other situation where direct tension forces are induced in anchor.
3. Unless otherwise noted, all concrete anchors which are submerged or are used in hanging items or have direct tension induced upon them, or which are subject to vibration from equipment such as pumps and generators, shall be adhesive anchors.
4. Adhesive anchors shall conform to the requirements of ACI 355.4 or alternately to AC308. Expansion or mechanical anchors shall conform to the requirements of ACI 355.2 or alternately to AC 193.
5. All anchors installed within fire resistant construction shall either be enclosed in a fire resistant envelope, be protected by approved fire-resistive materials, be used to resist wind loads only, or anchor non-structural elements.

B. Concrete Anchor Design”

An anchor design consists of specifying anchor size, quantity, spacing, edge distance and embedment to resist all applicable loads. Where an anchor design is indicated on the Drawings, it shall be considered an engineered design and anchors shall be installed to the prescribed size, spacing, embedment depth and edge distance. If all parts of an anchor design are provided on the Drawings except embedment depth, the anchors will be considered an engineered design and the Contractor shall provide the embedment depth as indicated in Paragraph B.3 unless otherwise directed by the Engineer. Where an anchor design is not indicated by the Engineer on the Drawings, the Contractor shall provide the anchor design per the requirements listed below.

1. Structural Anchors: All concrete anchors shall be considered structural anchors if they transmit load between structural elements; transmit load between non-structural components that make up a portion of the structure and structural elements; or transmit load between life-safety related attachments and structural elements. Examples of structural concrete anchors include but are not limited to column anchor bolts, anchors supporting non-structural walls, sprinkler piping support anchors, anchors supporting heavy, suspended piping or equipment, anchors supporting barrier rails, etc. For structural anchors, the Contractor shall submit an engineered design with signed and sealed calculations performed by an Engineer currently registered in the State of Florida. Structural anchors shall be of a type recommended by the anchor manufacturer for use in cracked concrete and shall be designed by the Contractor in accordance with ACI 318 Appendix D.
2. Non-Structural Anchors: All other concrete anchors may be considered non-structural concrete anchors. The Contractor shall perform an engineered design for non-structural anchors. The Engineer may request the Contractor provide anchor design details for review, but submission of a signed, sealed design is not required. Non-structural anchors shall be designed by the contractor for use in uncracked concrete.
3. Minimum anchor embedment shall be as indicated on the Drawings or determined by the Contractor’s engineered design. Concrete anchors shall be embedded no less than the manufacturer’s standard embedment (expansion or mechanical anchors) or to provide a minimum allowable bond strength equal to the allowable yield capacity of the rod/bolt (adhesive anchors).

C. Structural Anchors:

1. Mechanical Anchors:
 - a. Wedge Anchors: Wedge anchors shall be “Kwik Bolt TZ” by Hilti, Inc., “TruBolt +” by ITW Redhead, “Strong-Bolt” or “Strong-Bolt 2” by Simpson Strong-Tie Co. or “Powerstud SD-1” or “Powerstud SD-2” by Powers Fasteners.
 - b. Screw Anchors: Screw anchors shall be “Kwik HUS-EZ” and “KWIK HUS-EZ-I” by Hilti, Inc., “Titen HD” by Simpson Strong-Tie Co., or “Wedge-Bolt

+" by Powers Fasteners. Bits specifically provided by manufacturer of chosen system shall be used for installation of anchors.

- c. Sleeve Anchors: Sleeve anchors shall be "HSL-3 Heavy Duty Sleeve Anchor" by Hilti, Inc. or "Power-Bolt +" by Powers Fasteners.
- d. Undercut Anchors: Undercut anchors shall be "HDA Undercut Anchor" by Hilti, Inc., "Torq-Cut Undercut Anchor" by Simpson Strong-Tie Co., "Atomic + Undercut Anchor" by Powers Fasteners

2. Adhesive Anchors:

- a. Adhesive anchors shall be "Epcon C6+ Adhesive Anchoring System" by ITW Redhead, "HIT HY-200 Adhesive Anchoring System" by Hilti, Inc., "SET-XP Epoxy Adhesive Anchors" by Simpson Strong-Tie Co., or "Pure 110+ Epoxy Adhesive Anchor System" by Powers Fasteners.
- b. Structural adhesive anchor systems shall be IBC compliant and capable of resisting short term wind and seismic loads (Seismic Design Categories A through F) as well as long term and short term sustained static loads in both cracked and uncracked concrete in all Seismic Design Categories. Structural adhesive anchor systems shall comply with the latest revision of ICC-ES Acceptance Criteria AC308, and shall have a valid ICC-ES report in accordance with the applicable building code. No or equal products will be considered unless prequalified and approved by the Engineer and Owner.

D. Non-Structural Anchors: In addition to the acceptable non-structural anchors listed below, all structural anchors listed above may also be used as non-structural anchors.

1. Mechanical Anchors:

- a. Wedge Anchors: Wedge anchors shall be "Kwik Bolt 3" by Hilti, Inc. or "TruBolt" by ITW Redhead.
- b. Screw Anchors: Screw anchors shall be "Kwik HUS" by Hilti, Inc., "Wedge-Bolt" by Powers Fasteners or "Large Diameter Tapcon (LDT) Anchor" by ITW Redhead. Bits specifically provided by manufacturer of chosen system shall be used for installation of anchors.
- c. Sleeve Anchors: Sleeve anchors shall be "HSL Heavy Duty Sleeve Anchors" by Hilti, Inc. "Power-Bolt" by Powers Fasteners or "Dynabolt Sleeve Anchor" by ITW Redhead.
- d. Drop-In Anchors: Drop-in anchors shall be "Drop-In" by Simpson Strong-Tie Co., "HDI Drop-In Anchor" by Hilti, Inc. or "Multi-Set II Drop-In Anchor" by ITW Redhead.

- e. Undercut Anchors: Undercut anchors shall be “HDA Undercut Anchor” by Hilti, Inc.
2. Adhesive Anchors:
- a. Adhesive anchors shall be “Epcon A7” or “Epcon C6+ Adhesive Anchoring System” by ITW Redhead, “HIT HY-200 Adhesive Anchoring System” by Hilti, Inc., “SET Epoxy Tie High Strength Anchoring Adhesive” or “AT High Strength Anchoring Adhesive” by Simpson Strong-Tie Co., or “Powers AC 100+ Gold Vinylester Injection Adhesive Anchoring System” or “T308+ Epoxy Adhesive Injection System” by Powers Fasteners.
 - b. Non-structural adhesive anchors systems shall be IBC compliant and capable of resisting short term wind and seismic (Seismic Design Categories A and B) as well as long term and short term sustained static loads in uncracked concrete
 - c. Non-structural adhesive anchor embedment depth of the rod/bolt shall provide a minimum allowable bond strength that is equal to the allowable yield capacity of the rod/bolt unless noted otherwise on the Drawings.
 - d. No or equal products will be considered unless prequalified and approved by the Engineer and Owner.

E. Concrete Anchor Rod/Bolt Materials:

- 1. Concrete anchors used to anchor structural steel shall be a threaded steel rod per manufacturer’s recommendations for proposed adhesive system, but shall not have a yield strength (fy) less than 58 ksi nor an ultimate strength (fu) less than 72.5 ksi, unless noted otherwise. Where steel to be anchored is galvanized, concrete anchors shall also be galvanized unless otherwise indicated on the Drawings.
- 2. Concrete anchors used to anchor aluminum, FRP, or stainless steel shall be Type 304 stainless steel unless noted otherwise. All underwater concrete anchors shall be Type 316 stainless steel.
- 3. Nuts, washers, and other hardware shall be of a material to match the anchors.

2.05 MASONRY ANCHORS

- A. Anchors for fastening to solid or grout-filled masonry shall be adhesive anchors as specified above for concrete anchors.
- B. Anchors for fastening to hollow masonry or brick shall be adhesive anchors consisting of threaded rods or bolts anchored with an adhesive system dispensed into a screen tube inserted into the masonry. The adhesive system shall use a two-component adhesive mix and shall inject into the screen tube with a static mixing nozzle. Thoroughly clean drill holes of all debris and drill dust with nylon (not wire) brush prior to installation of adhesive and anchor. Contractor shall follow manufacturer’s installation instructions.

The adhesive system shall be "Epcon System A7 or C6" as manufactured by ITW Ramset/Redhead, "HIT HY-70 System" as manufactured by Hilti, Inc., "SET Epoxy-Tie" or "AT Acrylic-Tie" as manufactured by Simpson Strong-Tie Co., or "AC-100+ Gold by Powers Fasteners.

- C. Masonry anchors used to anchor steel shall be a threaded steel rod per manufacturer's recommendations for proposed adhesive system, but shall not have a yield strength (fy) less than 58 ksi nor an ultimate strength (fu) less than 72.5 ksi, unless noted otherwise. All masonry anchors shall be Type 316 stainless steel except where steel to be anchored is galvanized, masonry anchors shall also be galvanized.
- D. Masonry anchors used to anchor aluminum, FRP, or stainless steel shall be Type 316 stainless steel unless noted otherwise.

2.06 WELDS

- A. Electrodes for welding structural steel and all ferrous steel shall comply with AWS Code, using E70 series electrodes for shielded metal arc welding (SMAW), or F7 series electrodes for submerged arc welding (SAW).
- B. Electrodes for welding aluminum shall comply with the Aluminum Association Specifications and AWS D1.2.
- C. Electrodes for welding stainless steel and other metals shall comply with AWS code.

2.07 WELDED STUD CONNECTORS

- A. Welded stud connectors shall conform to the requirements of AWS D1.1 Type C.

2.08 EYEBOLTS

- A. Eyebolts shall conform to ASTM A489 unless noted otherwise.

2.09 HASTELLOY FASTENERS

- A. Hastelloy fasteners and nuts shall be constructed of Hastelloy C-276.

2.10 ANTISEIZE LUBRICANT

- A. Antiseize lubricant shall be Graphite 50 Anti-Seize by Loctite Corporation, 1000 Anti-Seize Paste by Dow Corning, 3M Lube and Anti-Seize by 3M, or equal.

PART 3 -- EXECUTION

3.01 MEASUREMENTS

- A. The CONTRACTOR shall verify all dimensions and review the Drawings and shall report any discrepancies to the ENGINEER for clarification prior to starting fabrication.

3.02 BOLT INSTALLATION

A. Anchor Bolts, Concrete Anchors, and Masonry Anchors

1. Anchor bolts shall be installed in accordance with AISC "Code of Standard Practice" by setting in concrete while it is being placed and positioned by means of a rigidly held template.
2. The CONTRACTOR shall verify that all concrete and masonry anchors have been installed in accordance with the manufacturer's recommendations and that the capacity of the installed anchor meets or exceeds the specified safe holding capacity.
3. Concrete anchors shall not be used in place of anchor bolts without ENGINEER's approval.
4. All stainless steel threads shall be coated with antiseize lubricant.

B. High Strength Bolts

1. All bolted connections for structural steel shall use high strength bolts. High strength bolts shall be installed in accordance with AISC "Specification for Structural Joints, using A325 or A490 Bolts." All high strength bolts installed by the "turn-of-nut" method shall have the turned portion marked with reference to the steel being connected after the nut has been made snug and prior to final tightening. These marks will be considered in inspection.
2. All stainless steel bolts shall be coated with antiseize lubricant.

C. Concrete Anchors

1. Concrete at time of anchor installation shall be a minimum age of 21 days.
2. Concrete anchors designed by the Contractor shall be classified as structural or non-structural based on the requirements indicated above.
3. Concrete Anchor Testing:
 - a. At all locations where concrete anchors meet the requirements for structural anchors at least 5 percent of all concrete anchors installed shall be proof tested to the value indicated on the Drawings, with a minimum of one tested anchor per anchor group. If no test value is indicated on the Drawings but the installed anchor meets the requirements for structural anchors, the Contractor shall notify the Engineer to allow verification of whether anchor load proof testing is required.
 - b. Contractor shall submit a plan and schedule indicating locations of anchors to be tested, load test values and proposed anchor testing procedure (including a diagram of the testing equipment proposed for use) to the Engineer for review prior to conducting any testing. Testing of anchors shall be in accordance with ASTM E488 for the static tension

test. If additional tests are required, inclusion of these tests shall be as stipulated on Contract Drawings.

- c. Where Contract Documents indicate anchorage design to be the Contractor's responsibility and the anchors are considered structural per the above criteria, the Contractor shall submit a plan and schedule indicating locations of anchors to be proof tested and load test values, sealed by a Professional Engineer currently registered in the State of Florida. The Contractor's Engineer shall also submit documentation indicating the Contractor's testing procedures have been reviewed and the proposed procedures are acceptable. Testing procedures shall be in accordance with ASTM E488.
 - d. Concrete Anchors shall have no visible indications of displacement or damage during or after the proof test. Concrete cracking in the vicinity of the anchor after loading shall be considered a failure. Anchors exhibiting damage shall be removed and replaced. If more than 5 percent of tested anchors fail, then 100 percent of anchors shall be proof tested.
 - e. Proof testing of concrete anchors shall be performed by an independent testing laboratory hired directly by the Contractor and approved by the Engineer. The Contractor shall be responsible for costs of all testing, including additional testing required due to previously failed tests.
4. All concrete anchors shall be installed in strict conformance with the manufacturer's printed installation instructions. A representative of the manufacturer shall be on site when required by the Engineer.
 5. All holes shall be drilled with a carbide bit unless otherwise recommended by the manufacturer. No cored holes shall be allowed unless specifically approved by the Engineer. If coring holes is allowed by the manufacturer and approved by the Engineer, cored holes shall be roughened in accordance with manufacturer requirements. Thoroughly clean drill holes of all debris and drill dust with compressed air followed by a wire brush prior to installation of adhesive and threaded rod/bolt unless otherwise recommended by the manufacturer. Degree of hole dampness shall be in strict accordance with manufacturer recommendations. Where depth of hole exceeds the length of the static mixing nozzle, a plastic extension hose shall be used to ensure proper adhesive injection from the back of the hole. Injection of adhesive into the hole shall utilize a piston plug to minimize the formation of air pockets. Wipe rod free from oil that may be present from shipping or handling.

D. Other Bolts

1. All dissimilar metal shall be connected with appropriate fasteners and shall be insulated with a dielectric or approved equal. Unless otherwise specified, where aluminum and steel members are connected together they shall be fastened with Type 316 stainless steel bolts and insulated with micarta, nylon, rubber, or equal.

3.03 WELDING

- A. All welding shall comply with AWS Code for procedures, appearance, quality of welds, qualifications of welders and methods used in correcting welded work.
- B. Welded stud connectors shall be installed in accordance with AWS D1.1.

3.04 INSPECTION

- A. High strength bolting will be visually inspected in accordance with AISC 348 "The 2009 RCSC Specification for Structural Joints". Rejected bolts shall be either replaced or retightened as required. In cases of disputed bolt installation, the bolts in question shall be checked by a calibrated wrench certified by an independent testing laboratory. The certification shall be at the CONTRACTOR's expense.
- B. Field welds will be visually inspected in accordance with AWS Codes. Inadequate welds shall be corrected or redone as required in accordance with AWS Codes.
- C. Inspection of post installed anchors shall be per requirements of the corresponding ICC ES ER.

- END OF SECTION -

SECTION 05120 - STRUCTURAL STEEL

PART 1 -- GENERAL

1.01 THE REQUIREMENT

- A. The CONTRACTOR shall furnish all equipment, materials, and services not otherwise specified for the fabrication, delivery, unloading, handling, storing, and erection of all structural steel work as shown on the Contract Documents.

1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Miscellaneous Metalwork.
- B. Painting.
- C. Auger Cast Piling

1.03 REFERENCED SPECIFICATIONS, CODES, AND STANDARDS

- A. Without limiting the generality of other requirements of these specifications, all Work specified herein shall conform to or exceed the requirements of the South Florida Building Code, Broward Edition, and the applicable requirements of the following documents to the extent that the provisions of such documents are not in conflict with the requirements of this section:
 - 1. AISC - "Code of Standard Practice for Steel Buildings and Bridges."
 - 2. AISC - "Specification for Design Fabrication and Erection of Structural Steel for Buildings", and including the "Commentary of the AISC Specification".
 - 3. AISC - "Specifications for Structural Joints Using ASTM A325 or A490 Bolts", as published by the American Institute of Steel Construction.
 - 4. Open web steel joists shall be designed in accordance with "Standard Specifications, Load Tables, and Weight Tables for Steel Joist and Joist Girders", as published by the Steel Joist Institute.
 - 5. Corrugated steel deck shall be designed in accordance with "SDI Steel Roof Deck Specifications", as published by the Steel Deck Institute.
 - 6. AWS - "Structural Welding Code", AWS Article D1.1 and "Standard Qualification Procedure", as published by American Welding Society.
- B. Reference herein to local codes as any code governing the region where project occurs.

1.04 SUBMITTALS

- A. In accordance with the procedures and requirements set forth in Section entitled "Submittals", the CONTRACTOR shall submit the following:

1. Certified Mill Test Reports
2. Affidavit of Compliance with grade specified
3. Shop Drawings
4. Certified Weld Inspection Reports

B. All Shop Drawings shall include the following:

1. Layout drawings indicating all structural shapes, sizes, and dimensions.
2. Beam and column schedules.
3. Detail drawings indicating jointing and anchoring details.
4. All steel work, framing, and details shall conform to Article 1.03 of this section.

No fabrication shall be started until Shop Drawings have been approved by the ENGINEER.

1.05 QUALITY ASSURANCE

- A. Shop inspection may be required by the ENGINEER at its own expense. The CONTRACTOR shall give ample notice to the ENGINEER prior to the beginning of any fabrication Work so that inspection may be provided. The CONTRACTOR shall furnish all facilities for the inspection of materials and workmanship in the shop, and the inspectors shall be allowed free access to the necessary parts of the works. Inspectors shall have the authority to reject any materials or Work which does not meet the requirements of these Specifications. Inspection at the shop is intended as a means of facilitating the Work and avoiding errors, but is expressly understood that it will in no way relieve the CONTRACTOR from its responsibility for furnishing proper materials or workmanship under this Specification.
- B. The CITY may engage inspectors to inspect welded connections and to perform tests and prepare test reports.
1. Ten percent of all butt and bevel welds which extend continuously for 24 inches or less will be completely tested in accordance with AWS DI.1, Part B, Radiographic Testing of Welds, Chapter 6. All butt and bevel welds which extend continuously for more than 24 inches will be spot tested at intervals not exceeding 36 inches.
 2. Welds that are required by the ENGINEER to be corrected shall be corrected or redone and retested as directed, at the CONTRACTOR'S expense and to the satisfaction of the ENGINEER and/or an acceptable independent testing lab.

PART 2 -- PRODUCTS

2.01 MATERIAL INFORMATION

- A. The term "structural steel" shall be as defined in the "Codes of Standard Practice for Steel Buildings and Bridges" of the American Institute of Steel Construction (AISC). Included as "Structural Steel" shall be all stiffeners, plates, sag rods and other miscellaneous metal required for a complete installation.

2.02 MATERIALS

A. Structural Steel:

1. Structural steel shall conform to the following specification, Structural Steel ASTM A36. Certified mill test reports or certified reports of tests made by the fabricator or a testing laboratory in accordance with ASTM A6 and the governing specification shall constitute evidence of conformity with the above ASTM specification. Additionally, the fabricator shall, if requested, provide an affidavit stating that the structural steel furnished meets the requirements of the grade specified. Unidentified steel, if free from surface imperfections, may be used for parts of minor importance or for unimportant details where the precise physical properties of the steel and its weld-ability would not affect the strength of the structure. All other unidentified steel will be rejected and shall be removed from the site and replaced by the CONTRACTOR, all at the expense of the CONTRACTOR.
2. Structural steel pipe shall be ASTM A501, or ASTM A53, Type E or S, Grade B.
3. Structural tubing shall be ASTM A501, or A500, Grade B. All members shall be furnished full length without splices unless otherwise noted or accepted by the ENGINEER.
4. Structural steel shall be cleaned and coated with a shop paint primer; except, that primer shall be omitted for surfaces to be galvanized with no further coating. Surface preparation and primer shall be as specified in Section 09900 - Painting. Shop prime coat shall be applied within eight hours after surface preparation.

B. Bolts: The requirements of bolts, fasteners, nuts and washers for structural steel are specified under this Section. All other fasteners are specified in Section 05500.

1. High strength bolts shall conform to the following specification, High Strength Bolts for Structural Joints, ASTM A325. Other bolts shall conform to the Specification for Low-Carbon Steel Externally and Internally. Threaded Standard Fasteners, ASTM A307. Manufacturers certification shall constitute sufficient evidence of conformity with the specifications.
2. High strength bolts, nuts and washer material that are denoted to be galvanized shall conform to the requirements of the current edition of standard specifications for quenched and tempered steel bolts and studs with suitable nuts and plain washers, ASTM designation A325, Type 1. Galvanizing shall be in accordance with the requirements of ASTM A325. Nuts shall meet the requirements of either ASTM A563 for Grade DH, or ASTM A194 for Grade 2H. Bolt dimensions shall conform to the

current requirements for regular semi-finished hexagon bolts, ANSI Designation B18.2, unless otherwise specified. Nut dimensions shall conform to current requirements for heavy hexagon semi-finished nuts ANSI designation B18.2. Washers shall be flat and smooth and their dimensions shall conform with the current requirements for heavy plain washers, ANSI designation B27.2.

3. Bolts used to connect dissimilar metals or in corrosion atmosphere shall be Type 316 Stainless Steel conforming to ASTM A193 and A194 standards.
 4. Bolts not manufactured in the United States shall be tested in the U.S. and certification provided with respect to specified and required quality and strength standards. Certification of origin shall be provided for all U.S. Fasteners. Bolts will be tested in the field for strength, as randomly selected by the ENGINEER.
- C. Rivet Steel: Rivet steel shall conform to the following specification, Structural Rivet Steel, ASTM A502-1. Certified mill test reports shall constitute sufficient evidence of conformity with the specifications.
- D. Anchor Bolts: Anchor bolts for structural steel shall be of the size and configuration shown on the Drawings and shall conform to ASTM A307 unless shown or noted otherwise on the Drawings. Bolts shall not be galvanized.
- E. Filler Metal for Welding: Welding electrodes for manual shielded metal arc welding shall conform to the Specifications for Mild Steel Covered Arc-Welding Electrodes, AWS A5.1. Bare electrodes and granular flux for the submerged-arc process shall conform to AWS-A5.17 as required for the conditions of actual use.

PART 3 -- EXECUTION

3.01 MEASUREMENT

- A. The CONTRACTOR shall verify all dimensions and shall make any field measurements necessary and shall be fully responsible for accuracy and layout of Work. The CONTRACTOR shall review the Drawings and any discrepancies shall be reported to the ENGINEER for clarification prior to starting fabrication.

3.02 FABRICATION

- A. General: Fabrication shall be in accordance with the American Institute of Steel Construction "Specification for the Design, Fabrication and Erection of Structural Steel for Buildings of the AISC.
- B. Anchor Bolts:
1. All anchor bolts for structural steel erection and other incidental items of the structural steel required to be built into concrete shall be properly set and securely held in position in the forms before the concrete is placed.
 2. Anchor bolts and setting plans for steel columns shall be provided at the site, marked or tagged for ready identification.

3. Bolts shall be accurately set to template and at elevation to provide suitable projection above concrete and/or grout. Maximum tolerances allowable from indicated locations are:
 - a. Elevation of concrete before grouting: + 1/4 inch.
 - b. Elevation of top of anchor bolts: + 1/2 inch to 0 inch under.
 - c. Line of anchor bolt: + 1/8 inch.
4. All holes in structural steel members required for anchors, anchor bolts, bolt holes, sag rods for securing wood or other members or for passing of other work noted on the Drawings shall be provided by the fabricator and detailed on the shop drawings.
5. Where misalignment between anchor bolts and bolt holes in steel members are encountered, the ENGINEER shall be immediately notified. The CONTRACTOR shall submit a method to remedy the misalignment for review by the ENGINEER.

C. Material:

1. All materials shall be properly worked and match-marked for field assembly. Where finishing is required, assembly shall be completed including bolting and welding of units before start of finishing operations.

3.03 ERECTION

- A. The erection of all structural steel shall conform to the applicable requirements of the current edition of the "Specifications for the Design, Fabrication and Erection of Structural Steel for Buildings" of the ASIC. All temporary bracing, guys and bolts as may be necessary to ensure the safety of the structure until the permanent connections have been made shall be provided by the CONTRACTOR. High strength steel bolts shall conform to the specifications of the Research Council on Riveted and Bolted Structural Joints of the Engineering Foundation for "Structural Joints using ASTM A325 or A490 Bolts".
- B. Except where otherwise noted on the Drawings or in this Specification, all shop connections shall be welded. All field connection shall be accurately fitted up before being bolted. Drifting shall be only such as well bring the parts into position and shall not be sufficient to enlarge the holes or to distort the metal. All unfair holes shall be drilled or reamed.
- C. High Strength Steel Bolts:
 1. All bolted connections with high strength bolts shall use Direct Tension Indicator Devised in accordance with Paragraph 8(d)(4) of the "Specification for Structural Joints using ASTM A325 or A490 Bolts", approved by the Research Council on Structural Connections, November 13, 1985. High strength bolts shall be installed in properly aligned holes and tightened to at least the minimum tension specified in the table below. Alternately, calibrated wrench tightened may be used in lieu of Direct Tension Devices provided the requirements of paragraph 8(d)(2) of the same specification are met.

2. Fastener tension required for connections subject to direct tension:

<u>Nominal Bolt Size (Inches)</u>	<u>Minimum Tension in 1000's of Pounds (kips)</u>	
	<u>A325 Bolts</u>	<u>A490 Bolts</u>
1/2	12	15
5/8	19	24
3/4	28	35
7/8	39	49
1	51	64
1-1/8	56	80
1-1/4	71	102
1-3/8	85	121
1-1/2	103	148

Wrenches may be manual torque or power wrenches designed by the manufacturer for use with high strength bolts. If manual torque wrenches are used, their dials shall be calibrated on the job. If power wrenches are used, the manufacturer's recommendations shall be carefully followed and proper working conditions of the machine demonstrated before the work is started.

3. The ENGINEER will review the procedure for calibration of wrenches and installation of bolts and, in general, shall satisfy himself that all requirements of the specifications for "Structural Joints using ASTM A325 or A490 Bolts" are met.

D. Cutting and Burning:

1. The use of a gas cutting torch in the field for correcting fabrication errors will not be permitted on any major member in the structural framing. Its use may be permitted on minor members if the member is not under stress, and then only after the written acceptance of the ENGINEER has been obtained. No cutting of structural steel members in the field will be allowed except by the written acceptance by the ENGINEER.
2. Holes shall be provided per AISC specifications, or as indicated for securing other Work to structural steel framing and for the passage of other Work through steel framing members. Threaded nuts shall be welded to framing, and other specialty items, as shown, to receive other Work. No torch cut holes will be permitted.

E. Grouting of Base Plates and Bearing Plates:

1. All loose column base plates and billets shall be accurately set to the designated levels on steel wedges or angle screens in preparation for grouting under this Contract. Leveling plates grouted in place shall be installed under all structural steel columns.
2. Prior to the placement of non-shrink grout beneath base and bearing plates, the bottom surface of the plates shall be cleaned of all foreign materials, and concrete and masonry bearing surface shall also be cleaned of all foreign materials and roughened to improve bonding.

3. Anchor bolts shall be tightened after the supported members have been positioned and plumbed and the non-shrink grout has attained its specified strength.
4. Baseplates shall be grouted with non-shrink grout to assure full uniform bearing. Grouting shall be done prior to placing loads on the structure.

F. Welding:

1. Welding, where required, shall be performed in accordance with the requirements of the AWS - Structural Welding Code. All shop and field welds in structural steel shall be visually inspected by an AWS qualified welding inspector. The CONTRACTOR shall furnish a letter of certification for each welded connection stating that these requirements have been met.
2. In assembly and during welding the component parts of built-up work shall be held in place by sufficient clamps, temporary bolts or other adequate means to keep parts in proper position. Where temporary bolts are used, to hold the parts together in steel plates or similar work, the temporary bolts shall be removed and the holes shall be filled with welding material where practical. Otherwise, the nuts shall be tightened and the bolt threads outside the unit shall be burned and the bolt opened to prevent the nut from loosening.

G. Misfits at Bolted Connections:

1. Where misfits in erection bolting are encountered, the ENGINEER shall be immediately notified. The CONTRACTOR shall submit a method to remedy the misfit for review by the ENGINEER. The ENGINEER will determine whether the remedy is acceptable or if the member must be refabricated.
2. Incorrectly sized or misaligned holes in members shall not be enlarged by burning or by the use of drift pins. The CONTRACTOR shall notify the ENGINEER immediately and shall submit a proposed method of remedy for review by the ENGINEER.

3.04 FIELD ASSEMBLY

- A. Structural frames shall be set accurately to the lines and elevations indicated. The various members shall be aligned and adjusted to form a part of a complete frame or structure before permanently fastened. Bearing surfaces and other surfaces which will be in permanent contact shall be cleaned before assembly. Necessary adjustments to compensate for discrepancies in elevations and alignments shall be performed.
- B. Individual members of the structure shall be leveled and plumbed within specified AISC tolerances. The CONTRACTOR shall provide and install all temporary bracing required until structure is complete.

3.05 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Structural members shall be loaded in such a manner that they may be transported and unloaded without being over-stressed, deformed or otherwise damaged.

- B. Structural steel members and packaged materials shall be protected from corrosion and deterioration. Material shall be stored in a dry area and shall not be placed in direct contact with the ground. Materials shall not be placed on the structure in a manner that might cause distortion or damage to the members or the supporting structures. Repair or replace damaged materials or structures as directed.

3.06 PAINTING

A. General Requirements:

1. Steel work which will be encased in concrete shall not be painted, and all other steel work shall be given one prime coat and one coat of shop paint before shipment to the field as specified under Section 09850, Painting. Steel work to be encased in concrete shall have all loose rust and scale removed by wire brushing or other methods as accepted by the ENGINEER prior to encasement.
2. After inspection and acceptance and before leaving the shop, all steel work specified to be painted shall be sand blasted or wheelabrated by the fabricator, of loose mill scale, loose rust, weld slag or flux deposit, dirt and other foreign matter to satisfy the following requirements of the Steel Structures Painting Council: Specification (SSPC), SP-6 NACE 3 for all steel except immersion service; for all steel in immersion service, SSPC-SP-10 NACE2.
3. Cleaned metal shall be primed or pretreated within six hours after cleaning to prevent new rust forming.

- B. Contact Surfaces: Contact surfaces shall be cleaned and primed in accordance with Item A of this Section but shall not be painted.

- C. Finished Surfaces: Machine finished surfaces shall be protected against corrosion by rust-inhibiting coating that can be easily removed prior to erection or which has characteristics that make removal unnecessary prior to erection.

- D. Surfaces Adjacent to Field Welds: Surfaces within 2 inches of any field weld location shall be free of materials that would prevent proper welding or produce objectionable fumes while welding is being done.

E. Painting Schedule:

1. After erection of the structural steel and miscellaneous steel is complete, the CONTRACTOR shall touch up all abrasions in the shop coat and shall spot paint all field rivets, field bolts and field welds with the paint and procedure specified in Section entitled "Painting".
2. All painting performed at the fabricators shop shall be subject to inspection by the CITY or its representative. All parts of the work shall be made accessible to the CITY or its representative. The CONTRACTOR shall correct such work as found defective under this Section of the specification.
3. Field cuts on galvanized steel shall be wire brushed and coated with Carbomastic 15, Carboline Co., or equal, to a thickness of 4 to 6 mils.

- END OF SECTION -

SECTION 05500 - METAL FABRICATIONS

PART 1 -- GENERAL

1.01 THE REQUIREMENT

- A. The CONTRACTOR shall furnish, fabricate, and install miscellaneous metalwork and appurtenances, complete, all in accordance with the requirements of the Contract Documents.

1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Section 05050 - Metal Fastening
- B. Section 09900 - Painting

1.03 REFERENCE SPECIFICATIONS, CODES, AND STANDARDS

- A. Without limiting the generality of other requirements of these Specifications, all work specified herein shall conform to or exceed the requirements of the Florida Building Code and the applicable requirements of the following documents to the extent that the provisions of such documents are not in conflict with the requirements of this Section:

1. American Society for Testing and Materials (ASTM), specifications as referred to herein.
2. American Welding Society (AWS) "Structural Welding Code-Steel" (AWS D1.1) which includes qualification procedures for welders.
3. American Institute of Steel Construction (AISC) "Specifications for the Design, Fabrication, and Erection of Structural Steel for Buildings" and "Commentary on the AISC Specification."
4. American Iron and Steel Institute (AISI) "Specifications for the Design of Cold-Formed Steel Structural Members" and "Commentary on the AISI Specification."
5. Occupational Safety and Health Administration (OSHA) Regulations.
6. Aluminum Association "Specifications for Aluminum Structures" and "Engineering Data for Aluminum Structures."
7. National Association of Architectural Metal Manufacturers "Metal Stairs Manual."

- B. References herein to "Building Code" shall mean the Florida Building Code.

1.04 SUBMITTALS

- A. Shop drawings of all miscellaneous metalwork shall be submitted to the ENGINEER for review in accordance with the Section 01300 entitled "Submittals."

- B. Safe working load capacity in tension and shear for each size and type of concrete anchor used shall be submitted to the ENGINEER for review.

PART 2 -- PRODUCTS

2.01 METAL MATERIALS

- A. Materials are specified in Section 05010 entitled "Metal Materials".

2.02 BOLTS, CONCRETE ANCHORS AND FASTENERS

- A. Bolts, concrete anchors and other fasteners are specified in Section 05050 entitled "Metal Fastening".

2.03 STEEL PIPE BUMPER GUARDS

- A. Steel pipe bumper guards shall be as detailed on the Drawings, including pipe sleeves, concrete fill, crushed fill and grouting to secure parts. Pipe for guards shall be galvanized steel, Schedule 40 pipe that conforms to ASTM A53. Painting shall be in accordance with Section 09900 entitled "Painting".
- B. Steel pipe bumper guards shall be concrete filled and crowned, as detailed on the Drawings.

PART 3 -- EXECUTION

3.01 EXAMINATION

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

3.01 FABRICATION

- A. All measurements and dimensions shall be based on field conditions and shall be verified by the CONTRACTOR prior to fabrication. Such verification shall include coordination with adjoining work.
- B. All fabricated work shall be shop fitted together as much as practicable, and delivered to the field, complete and ready for erection. All miscellaneous items such as stiffeners, fillets, connections, brackets, and other details necessary for a complete installation shall be provided.
- C. All work shall be fabricated and installed in a manner that will provide for expansion and contraction, prevent shearing of bolts, screws, and other fastenings, ensure rigidity, and provide a close fit of sections.
- D. Finished members shall conform to the lines, angles, and curves shown on the Drawings and shall be free from distortions of any kind.

- E. All shearings shall be neat and accurate, with parts exposed to view neatly finished. Flame cutting is allowed only when performed utilizing a machine.
- F. All shop connections shall be welded unless otherwise indicated on the Drawings or specified herein. Bolts and welds shall conform to Section 05050, Metal Fastening. All fastenings shall be concealed where practicable.
- G. Fabricated items shall be shop painted when specified in Section 09900, Painting.

3.02 PREPARATION

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

3.03 INSTALLATION

- A. Install items plumb and level, accurately fitted, free from distortion or defects.
- B. Allow for erection loads, and for sufficient temporary bracing to maintain true alignment until completion of erection and installation of permanent attachments.
- C. Field weld components indicated on Drawings.
- D. Obtain ENGINEER approval prior to site cutting or making adjustments not scheduled.
- E. Fabrication and Erection: Except as otherwise shown, the fabrication and erection of structural steel shall conform to the requirements of the American Institute of Steel Construction "Manual of Steel Construction."

3.04 WELDING

- A. All welding shall be by the metal-arc method or gas-shielded arc method as described in the American Welding Society's "Welding Handbook" as supplemented by other pertinent standards of the AWS. Qualification of welders shall be in accordance with the AWS Standards governing same.
- B. In assembly and during welding, the component parts shall be adequately clamped, supported and restrained to minimize distortion and for control of dimensions. Weld reinforcement shall be as specified by the AWS Code. Upon completion of welding, all weld splatter, flux, slag, and burrs left by attachments shall be removed. Welds shall be repaired to produce a workmanlike appearance, with uniform weld contours and dimensions. All sharp comers of material which is to be painted or coated shall be ground to a minimum of 1/32-inch on the flat.

- END OF SECTION -

SECTION 05530 - CASTINGS

PART 1 -- GENERAL

1.01 THE REQUIREMENT

- A. The CONTRACTOR shall furnish, fabricate, and install for meter vault access and meter probe extraction and appurtenances, complete, and in accordance with the requirements of the Contract Documents.

1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Section 05500 –Metal Fabrications
- B. Painting and protective coating of metalwork and fabricated items shall, unless otherwise specified herein, be performed in accordance with the requirements of Section 09900 – Painting.

1.03 REFERENCE SPECIFICATIONS, CODES AND STANDARDS

- A. Specifications, codes and standards shall be as specified in Section 05500 – Miscellaneous Metalwork and as referred to herein.

1.04 SUBMITTALS

- A. Shop drawings of all items specified herein shall be submitted to the ENGINEER for review in accordance with Section entitled "Submittals."

PART 2 -- PRODUCTS

2.01 MANUFACTURERS, OR EQUAL

- A. Castings: Neenah Foundry Company, U.S. Foundry

2.02 CASTINGS

- A. Castings shall include, but not be limited to, frames and covers.
- B. Catalog numbers indicated on the Contract Drawings are given only to show required types and configuration. All covers shall be cast with raised letters as designated on the applicable standard detail sheets of the Drawings.
- C. Covers shall fit together evenly with their frames, so that the cover fits flush with the surrounding finished surface and so that the cover does not rock or rattle when loading is applied. Round covers and frames shall have machined bearing surfaces.
- D. Covers with matching frames shall be designed to support the following loadings:
 - 1. At all locations the design loading shall be a standard AASHTO H-20 truck loading.

- E. Watertight gasketing, bolting, locking devices, patterns, lettering, pickholes, vents, or self-sealing features shall be as detailed on the Drawings.

PART 3 -- EXECUTION

3.01 EXAMINATION

- A. Verify that opening sizes and dimensional tolerances are acceptable.
- B. Verify that supports and anchors are correctly positioned.

3.02 INSTALLATION

- A. Install components in accordance with manufacturer's instructions.
- B. Place frames in correct position, plumb and level.

- END OF SECTION -

DIVISION 6 – WOOD AND PLASTICS

DIVISION 7 – THERMAL AND MOISTURE PROTECTION

NOT USED

DIVISION 8 – DOORS AND WINDOWS

NOT USED

DIVISION 9 – FINISHES

NOT USED

DIVISION 10 – SPECIALTIES

NOT USED

DIVISION 11 – EQUIPMENT

NOT USED

DIVISION 12 – FURNISHINGS

NOT USED

DIVISION 13 – SPECIAL CONSTRUCTION

NOT USED

DIVISION 14 – CONVEYING SYSTEMS

NOT USED

DIVISION 15 – MECHANICAL CONSTRUCTION

SECTION 15000 - BASIC MECHANICAL REQUIREMENTS

PART 1 -- GENERAL

1.01 THE REQUIREMENT

- A. The CONTRACTOR shall furnish and install to the required line and grade, all piping together with all fittings and appurtenances, required for a complete installation. All piping located outside the face of structures or building foundations and all piping embedded in concrete within a structure or foundation shall be considered exterior piping.
- B. The CONTRACTOR shall furnish and install fittings, couplings, connections, sleeves, adapters, harness rods and closure pieces as required to connect pipelines of dissimilar materials and/or sizes herein included under this Section and other concurrent Contracts for a complete installation.
- C. The CONTRACTOR shall furnish all labor, materials, equipment, tools, and services required for the furnishing, installation and testing of all piping as shown on the Drawings, specified in this Section and required for the Work. Piping shall be furnished and installed of the material, sizes, classes, and at the locations shown on the Drawings and/or designated in this Section. Piping shall include all fittings, adapter pieces, couplings, closure pieces, harnessing rods, hardware, bolts, gaskets, wall sleeves, wall pipes, hangers, supports, and other associated appurtenances for required connections to equipment, valves, or structures for a complete installation.
- D. Piping assemblies under 4-inch size shall be generally supported on walls and ceilings, unless otherwise shown on the Drawings or ordered by the ENGINEER, being kept clear of openings and positioned above "headroom" space. Where practical, such piping shall be run in neat clusters, plumb and level along walls, and parallel to overhead beams.
- E. The CONTRACTOR shall provide taps on piping where required or shown on the Drawings. Where pipe or fitting wall thicknesses are insufficient to provide the required number of threads, a boss or pipe saddle shall be installed.
- F. The work shall include, but not be limited to, the following:
 - 1. Connections to existing pipelines.
 - 2. Test excavations necessary to locate or verify existing pipe and appurtenances.
 - 3. Installation of all new pipe and materials required for a complete installation.
 - 4. Cleaning, testing and disinfecting as required.

1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Division 1, General Requirements
- B. Division 2, Sitework

- C. Division 5, Metals
- D. Division 9, Finishes
- E. Division 11, Equipment
- F. Division 16, Electrical

1.03 MANUFACTURERS

- A. The City of Hollywood requires all ductile iron pipe and fittings to be manufactured in America.

1.04 MATERIAL CERTIFICATION AND SHOP DRAWINGS

- A. The CONTRACTOR shall furnish to the CITY (through the ENGINEER) a Material Certification stating that the pipe materials and specials furnished under this Section conform to all applicable provisions of the corresponding Specifications. Specifically, the Certification shall state compliance with the applicable standards (ASTM, AWWA, etc.) for fabrication and testing.
- B. Shop Drawings for major piping (2-inches in diameter and greater) shall be prepared and submitted in accordance with Section 01300 – Submittals. In addition to the requirements of Section 01300 – Submittals, the CONTRACTOR shall submit laying schedules and detailed Drawings in plan and profile for all piping as specified and shown on the Drawings.
- C. Shop Drawings shall include, but not be limited to, complete piping layout, pipe material, sizes, class, locations, necessary dimensions, elevations, supports, hanger details, pipe joints, and the details of fittings including methods of joint restraint. No fabrication or installation shall begin until Shop Drawings are approved by the ENGINEER.

PART 2 -- PRODUCTS

2.01 GENERAL

- A. All specials and every length of pipe shall be marked with the manufacturer's name or trademark, size, class, and the date of manufacture. Special care in handling shall be exercised during delivery, distribution, and storage of pipe to avoid damage and unnecessary stresses. Damaged pipe will be rejected and shall be replaced at the CONTRACTOR's expense. Pipe and specials stored prior to use shall be stored in such a manner as to keep the interior free from dirt and foreign matter.
- B. Testing of pipe before installation shall be as described in the corresponding ASTM or AWWA Specifications and in the applicable standard specifications listed in the following sections. Testing after the pipe is installed shall be as specified in Section 3.09.
- C. Joints in piping shall be of the type as specified in the appropriate Piping System Schedule in Section 15390, Schedules.

- D. ALL BURIED EXTERIOR PIPING SHALL HAVE RESTRAINED JOINTS FOR THRUST PROTECTION UNLESS OTHERWISE SPECIFIED OR SHOWN ON THE DRAWINGS. ALL EXPOSED EXTERIOR PIPING SHALL HAVE FLANGED JOINTS, UNLESS OTHERWISE SPECIFIED OR SHOWN ON THE DRAWINGS.
- E. The CONTRACTOR shall verify existing above ground and buried piping tie-in connections before fabricating new piping assemblies. The CONTRACTOR shall verify size, type, and location of all existing buried piping and appurtenances by excavating test pits as required of all buried connections and crossings which may affect the CONTRACTOR's work prior to ordering pipe and fittings to determine sufficient information for ordering materials. The CONTRACTOR shall take whatever measurements that are required to complete the work as shown or specified.
- F. Before setting wall sleeves, pipes, castings and pipes to be cast in place, the CONTRACTOR shall check the Drawings and equipment manufacturer's drawings which may have a direct bearing on the pipe locations.
- G. Piping shall be attached to pumps, valves, equipment, etc., in accordance with the respective manufacturers' recommendations. This includes the use of flexible connectors as required.
- H. All changes in directions or elevations shall be made with fittings, unless otherwise shown.

2.02 WALL PIPES

- A. Where wall sleeves or wall pipes occur in walls that are continuously wet on one or both sides, they shall have water stop flanges at the center of the casting or as shown on the Drawings. Ends of wall pipes shall be flange, mechanical joint, plain end, or bell as shown on the Drawings, or as required for connection to the piping. Wall pipes shall be of the same material as the piping that they are connected to. If welded waterstop flanges are employed, welds shall be 360 degree continuous on both sides of flange. Unless otherwise shown on the Drawings, waterstop flanges shall conform to the minimum dimensions shown below:

<u>Pipe Size</u>	<u>Waterstop Flange Diameter</u>	<u>Waterstop Flange Thickness</u>
4" - 12"	OD + 3.10"	0.50"
14" - 24"	OD + 4.15"	0.75"
30" - 36"	OD + 4.50"	1.00"
42" - 48"	OD + 5.00"	1.25"
54"	OD + 5.90"	1.50"

2.03 SLEEVES

- A. Unless shown otherwise, all piping passing through walls and floors shall be installed in sleeves or wall castings accurately located before concrete is poured, or placed in position during construction of masonry walls. Sleeves passing through floors shall extend from the bottom of the floor to a point 3 inches above the finished floor, unless shown otherwise.

Water stop flanges are required on all sleeves located in floors or walls which are continually wet or under hydrostatic pressure on one or both sides of the floor or wall.

- B. Sleeves shall be cast iron, black steel pipe, or fabricated steel in accordance with details shown on the Drawings. If not shown on the Drawings, the CONTRACTOR shall submit to the ENGINEER the details of sleeves he proposes to install; and no fabrication or installation thereof shall take place until the ENGINEER's approval is obtained. Steel sleeves shall be fabricated of structural steel plate in accordance with the standards and procedures of AISC and AWS. Steel sleeve surfaces shall receive a commercial sandblast cleaning and then be shop painted in accordance with Section 09900 – Painting.
- C. When shown on the Drawings or otherwise required, the annular space between the installed piping and sleeve shall be completely sealed against a maximum hydrostatic pressure of 20 psig. Seals shall be mechanically interlocked, solid rubber links, trade name "Link-Seal", as manufactured by the Thunderline Corp., Wayne, Michigan, or equal. Rubber link, seal-type, size, and installation thereof, shall be in strict accordance with the manufacturer's recommendations. For non-fire rated walls and floors, pressure plate shall be glass reinforced nylon plastic with EPDM rubber seal and 304 stainless steel bolts and nuts. For fire rated walls and floors, two independent seals shall be provided consisting of low carbon steel, zinc galvanized pressure plates, silicon rubber seals and low carbon steel, zinc galvanized bolts and nuts.
- D. Cast iron mechanical joint adapter sleeves shall be Clow # 1429, as manufactured by the Clow Corp., or equal. Mechanical joint adapter sleeves shall be provided with suitable gasket, follower ring, and bolts to effect a proper seal. In general, sleeves installed in walls, floors, or roofs against one side of which will develop a hydrostatic pressure, or through which leakage of liquid will occur, shall be so sealed. If welded waterstop flanges are employed, welds shall be 360 degree continuous on both sides of flange.

2.04 SOLID SLEEVE COUPLINGS

- A. Solid sleeve couplings shall be used to connect buried service piping where shown on the Drawings. Solid sleeves shall be ductile iron, long body and shall conform to the requirements of ANSI A21.10 (AWWA C110). Unless otherwise shown or specified, solid sleeve couplings shall be Style A11760 as manufactured by American Cast Iron Pipe Co., or equal.

2.05 FLEXIBLE COUPLINGS

- A. Flexible couplings shall be as manufactured by the Red Valve Company and shall consist of a molded reinforced fabric of cotton and natural rubber. Galvanized steel retaining rings shall be furnished. End connections shall match ANSI 125 pound flanges with a minimum pressure rating of 140 psi.

2.06 SLEEVE TYPE COUPLINGS

- A. Sleeve type, flexible couplings shall be furnished and installed where shown on the Drawings or otherwise required to resist internal operating pressures. In addition to that specified herein, harnessed, sleeve type flexible couplings shall be provided on all exposed pipe 3 inches and larger in diameter that spans any expansion joint in a building or structure.

- B. Materials shall be of high strength steel and couplings shall be rated for the same pressures as the connecting piping.
- C. Gaskets shall be rubber. Bolts and nuts shall be alloy steel, corrosion-resistant and prime coated.
- D. Couplings shall be shop primed with a premium quality primer compatible with the painting system specified in Section 09900 - Painting. Field painting of wetted area shall be done prior to installation.
- E. Harnessing
 - 1. Harness couplings to adjacent flanges as shown, specified or otherwise required to restrain all pressure piping.
 - 2. Dimensions, sizes, spacing and materials for lugs, tie rods, washers, and nuts shall conform to the standards for the pipe size, and design pressure specified.
 - 3. No less than two (2) bolts shall be furnished for each coupling.
 - 4. Tie bolts, nuts and washers shall be ASTM A 193, Grade B7 steel or better and as a minimum shall be hot dip galvanized.
 - 5. Harness rods shall have lengths less than 10 feet between adjacent flanged joints on fittings and as a minimum shall be hot dip galvanized.
- F. Couplings shall be as manufactured by Dresser Industries, Style 38, or equal as required and shown on the Drawings. All couplings shall be provided without interior pipe stop.

2.07 FLANGED ADAPTERS

- A. Flanged adapters shall be furnished as required and as shown on the Drawings.
- B. All flanged adapters, 12 inches in diameter and smaller, except as shown on the Drawings or directed by the ENGINEER, shall be locking type flanged adapters.
- C. Pressure and service shall be the same as connected piping.
- D. Materials shall be cast iron for pipes up to 12 inch diameter and high strength steel for pipes larger than 12 inch diameter.
- E. Flanged adapters shall be shop primed with a premium quality primer compatible with the paint system specified in Section 09900 – Painting. Field painting of wetted area shall be done prior to installation.
- F. Bolts and nuts shall be alloy steel, corrosion-resistant and prime coated.
- G. Where identified on the Drawings, flanged coupling adapters shall be harnessed by tying the adapter to the nearest pipe joint flange using threaded rods and rod tabs. The threaded

rods, rod tabs, nuts, bolts and washers shall be as shown on the Drawings and as a minimum shall be hot dip galvanized.

- H. Flanged adapters shall be as manufactured by Dresser Industries, Style 127 or 128, Smith Blair Corporation, or equal.

2.08 MECHANICAL COUPLINGS (SPLIT TYPE - SHOULDERED END)

- A. Mechanical couplings (split type-shouldered end) shall be furnished as specified or shown on the Drawings.
- B. Materials shall be of malleable iron and couplings shall be rated for the same pressures as the connecting piping.
- C. Gaskets shall be rubber. Bolts and nuts shall be heat treated carbon steel track bolts and shall be plated.
- D. After installation, buried couplings shall receive two heavy coats of an approved coal tar which is compatible with the finish of the coupling. Exposed couplings shall be painted in accordance with Section 09900 - Painting.
- E. Couplings shall be as manufactured by Victaulic Company of America, Style 44, or equal.

2.09 UNIONS

- A. For ductile iron, carbon steel, and grey cast iron pipes assembled with threaded joints and malleable iron fittings, unions shall conform to ANSI B16.39.
- B. For copper piping, unions shall have ground joints and conform to ANSI B16.18.
- C. For PVC and CPVC piping, unions shall be socket weld type with Viton O-ring.

2.10 THERMOPLASTIC TUBING AND FITTINGS

- A. Thermoplastic tubing shall be manufactured from polyallomor tubing. Tubing shall be protected from ultraviolet radiation degradation with a black coating or integral color conforming to ASTM D-1248, Type 1, Class C, Category 3. Fittings and connectors used with thermoplastic tubing shall be the flareless tube type constructed of brass conforming to SAE CA377, SAE CA360 or equal. Brass sleeves shall be used.
- B. Assembly of the thermoplastic tubing shall consist of pushing the tubing into the fitting and hand tightening the nut with final tightening with a wrench. Care shall be taken not to overtighten the nut. Plastic tube racks and bend holders shall be provided for holding the tubing in position. Needle valves used with thermoplastic tubing shall be the globe type constructed with a brass body, stem and seat and Buna-N "O"-ring seals. Installation shall be in accordance with the manufacturer's recommendations. Thermoplastic tubing shall be the Impolene (polyallomor) system and needle valves, fittings and connectors shall be the Poly-Flo with 261 UB Universal Nut and Sleeve system as manufactured by Imperial Eastman, or equal.

2.11 RESTRAINED JOINTS

- A. Where required for ductile iron pipe, unless specified elsewhere, all mechanical joint fittings, valves and appurtenances shall be restrained as described herein. The restraint rings shall be manufactured of ductile iron conforming to ASTM A536 and incorporate a plurality of individually-actuating gripping surfaces to grip the pipe. The restraint device shall be coated in MEGA-BOND Restraint Coating System. The restraint system shall consist of two series 1100 MEGALUGS mechanical joint restraint follower glands with the second follower gland having the mechanical joint lip removed at the factory to seat properly behind the first. The restraint system shall have a sufficient number of fastening bolts to connect the rings to the mechanical joint. Torque limiting twist off nuts shall be used to ensure proper actuation of the restraining wedges. The restraint system shall have a minimum safety factor of 2 to 1. The restraint system shall be the Series 1100TDM Tandem MEGALUG Mechanical Joint Restraint manufactured by EBAA Iron, Inc., no exceptions.
- B. Where required for PVC pipe, unless specified elsewhere, restrained joint retainer glands shall be used and shall be cast from 60-42-10 ductile iron and shall have a sufficient number of ductile tie bolts to restrain working test pressure as required. The retainer clamp shall be of two piece construction with serrations on the I.D. sufficient to hold the required pressures with a safety factor of 2:1. The retainers shall be Series 1500 or 6500 as manufactured by EBAA Iron, Inc., no exceptions.

PART 3 -- EXECUTION

3.01 INSTALLATION

- A. All piping shall be installed by skilled workmen and in accordance with the best standard practice for piping installation as shown on the Drawings, specified or recommended by the pipe manufacturer. Proper tools and appliances for the safe and convenient handling and installing of the pipe and fittings shall be used. Great care shall be taken to prevent any pipe coating from being damaged on the inside or outside of the pipe and fittings. All pieces shall be carefully examined for defects, and no piece shall be installed which is known to be cracked, damaged, or otherwise defective. If any defective pieces should be discovered after having been installed, it shall be removed and replaced with a sound one in a satisfactory manner by the CONTRACTOR and at his own expense. Pipe and fittings shall be thoroughly cleaned before they are installed and shall be kept clean until they are accepted in the complete work. All piping connections to equipment shall be provided with unions or coupling flanges located so that piping may be readily dismantled from the equipment. At certain applications, Dresser, Victaulic, or equal, couplings may also be used. All piping shall be installed in such a manner that it will be free to expand and contract without injury to itself or to structures and equipment to which it is connected. All piping shall be erected to accurate lines and grades with no abrupt changes in line or grade and shall be supported and braced against movement, temporary, or permanent. All exposed piping shall be installed with vertical and horizontal angles properly related to adjoining surfaces or pipes to give the appearance of good workmanship. Unless otherwise shown or approved, provided a minimum headroom clearance under all piping of 7 feet 6 inches.
- B. Unless otherwise shown or specified, all waste and vent piping shall pitch uniformly at a 1/4-inch per foot grade and accessible cleanouts shall be furnished and installed as shown

and as required by local building codes. Installed length of waste and vent piping shall be determined from field measurements in lieu of the Drawings.

- C. All excavation shall be made in such a manner and to such widths as will provide ample room for properly installing the pipe and permit thorough compaction of backfill around the pipe. The minimum trench widths shall be in strict accordance with the "Trench Width Excavation Limits" as shown on the Drawings. All excavation and trenching shall be done in strict accordance with these specifications and all applicable parts of the OSHA Regulations, 29CFR 1926, Subpart P.
- D. ALL EXCAVATION REQUIRED BY THIS CONTRACT SHALL BE UNCLASSIFIED. NO ADDITIONAL PAYMENT WILL BE MADE FOR ROCK EXCAVATION REQUIRED FOR THE INSTALLATION OF PIPE OR STRUCTURES SHOWN ON THE DRAWINGS.
- E. Enlargements of the trench shall be made as needed to give ample space for operations at pipe joints. The width of the trench shall be limited to the maximum dimensions shown on the Drawings, except where a wider trench is needed for the installation of and work within sheeting and bracing. Except where otherwise specified, excavation slopes shall be flat enough to avoid slides which will cause disturbance of the subgrade, damage to adjacent areas, or endanger the lives or safety of persons in the vicinity.
- F. Hand excavation shall be employed wherever, in the opinion of the ENGINEER, it is necessary for the protection of existing utilities, poles, trees, pavements, or obstructions.
- G. No greater length of trench in any location shall be left open, in advance of pipe laying, than shall be authorized or directed by the ENGINEER and, in general, such length shall be limited to approximately one hundred (100) feet. The CONTRACTOR shall excavate the trenches to the full depth, width and grade indicated on the Drawings including the relevant requirements for bedding. The trench bottoms shall then be examined by the ENGINEER as to the condition and bearing value before any pipe is laid or bedding is placed.
- H. No pressure testing shall be performed until the pipe has been properly backfilled in place. All pipe passing through walls and/or floors shall be provided with wall pipes or sleeves in accordance with the specifications and the details shown on the Drawings. All wall pipes shall be of ductile iron and shall have a water stop located in the center of the wall. Each wall pipe shall be of the same class, thickness, and interior coating as the piping to which it is joined. All buried wall pipes shall have a coal tar outside coating on exposed surfaces.
- I. JOINT DEFLECTION SHALL NOT EXCEED 75 PERCENT OF THE MANUFACTURERS RECOMMENDED DEFLECTION. Excavation and backfilling shall conform to the requirements of Division 2, and as specified herein. Maximum trench widths shall conform to the Trench Width Excavation Limits shown on the Drawings. All exposed, submerged, and buried piping shall be adequately supported and braced by means of hangers, concrete piers, pipe supports, or otherwise as may be required by the location.
- J. Following proper preparation of the trench subgrade, pipe and fittings shall be carefully lowered into the trench so as to prevent dirt and other foreign substances from gaining entrance into the pipe and fittings. Proper facilities shall be provided for lowering sections of pipe into trenches. UNDER NO CIRCUMSTANCES SHALL ANY OF THE MATERIALS BE DROPPED OR DUMPED INTO THE TRENCH.

- K. Water shall be kept out of the trench until jointing and backfilling are completed. When work is not in progress, open ends of pipe, fittings, and valves shall be securely closed so that no water, earth, or other substance will enter the pipes, fitting, or valves. Pipe ends left for future connections shall be valved, plugged, or capped, and anchored as required.
- L. All piping shall be installed in such a manner that it will be free to expand and/or contract without injury to itself or to structures and equipment to which it is connected. All piping shall be erected to accurate lines and grades with no abrupt changes in line or grade and shall be supported and braced against movement, temporary, or permanent. All exposed piping shall be installed with vertical and horizontal angles properly related to adjoining surfaces or pipes to give the appearance of good workmanship. Pipes crossing within a vertical distance of less than or equal to one (1) foot shall be encased and supported with concrete at the point of crossing to prevent damage to the adjacent pipes as shown on the Drawings.
- M. The full length of each section of pipe shall rest solidly upon the bed of the trench, with recesses excavated to accommodate bells, couplings, joints, and fittings. Before joints are made, each pipe shall be well bedded on a solid foundation; and no pipe shall be brought into position until the preceding length has been thoroughly bedded and secured in place. Pipe that has the grade or joint disturbed after laying shall be taken up and relaid by the CONTRACTOR at his own expense. Pipe shall not be laid in water or when trench conditions are unsuitable for work.
- N. Proper and suitable tools and appliances for the safe convenient handling and laying of pipe shall be used and shall in general agree with manufacturer's recommendations.
- O. AT THE CLOSE OF EACH WORK DAY THE END OF THE PIPELINE SHALL BE TIGHTLY SEALED WITH A CAP OR PLUG SO THAT NO WATER, DIRT, OR OTHER FOREIGN SUBSTANCE MAY ENTER THE PIPELINE, AND THIS PLUG SHALL BE KEPT IN PLACE UNTIL PIPE LAYING IS RESUMED.
- P. During the laying of pipe, each pipe manufacturer shall provide his own supervisor to instruct the CONTRACTOR's pipe laying personnel in the correct procedure to be followed.
- Q. Ordinarily only full lengths of pipe (as furnished by the pipe manufacturer) shall be used exceptions: closure pieces at manholes and areas where joint deflection is required.
- R. For gravity sewer installations, the CONTRACTOR shall use a laser device to maintain the trench and pipe alignment. The laser device shall be re-checked for correct elevation and pipe alignment prior to pipe installation if the device is left in the pipe overnight. Corrected invert elevations at each manhole and any adjustments will be coordinated and approved by the ENGINEER.
- S. ALL PIPING SHALL HAVE TYPE "A" BEDDING AS SHOWN ON THE DRAWINGS, UNLESS OTHERWISE SPECIFIED HEREIN OR INDICATED ON THE DRAWINGS.

3.02 REINFORCED CONCRETE PIPE, CONCRETE CULVERT, AND DRAIN PIPE

- A. The laying of reinforced concrete pipe shall conform to the applicable sections of the Concrete Pipe Handbook as published by the American Concrete Pipe Association.

3.03 DUCTILE IRON PIPE

- A. Ductile iron pipe (DIP) shall be installed in accordance with the requirements of the Ductile Iron Pipe Handbook published by the Ductile Iron Pipe Research Association, and AWWA C600.
- B. Where it is necessary to cut ductile iron pipe in the field, such cuts shall be made carefully in a neat workmanlike manner using approved methods to produce a clean square cut. The outside of the cut end shall be conditioned for use by filing or grinding a small taper, at an angle of approximately 30 degrees.
- C. UNLESS OTHERWISE APPROVED BY THE ENGINEER, FIELD WELDING OF DUCTILE IRON WILL NOT BE PERMITTED.

3.04 PVC/CPVC AND HDPE PIPE

- A. Polyvinyl chloride (PVC), chlorinated polyvinyl chloride (CPVC) and High Density Polyethylene (HDPE) pipe shall be laid and joints assembled according to the respective manufacturer's recommendation. PVC pipe installation shall comply with applicable sections of the Uni-Bell PVC Pipe Association Recommended Standard Specifications.
- B. Plastic piping shall not be installed when the temperature is less than 60 degrees F except as otherwise recommended by the manufacturer and approved by the ENGINEER.

3.05 CARBON AND STAINLESS STEEL PIPE

- A. Installation of steel pipe shall be by skilled workmen and shall conform to the applicable sections of AWWA Manual M-11. Joints for steel piping shall be either screwed, welded, or flanged as shown on the Drawings or as specified.
- B. Welding in the field shall be performed only when requested on the shop drawings and permitted by the ENGINEER for carbon steel pipe. No welding of stainless steel pipe shall be allowed in the field. All field welds shall be radiographically inspected.
- C. Installation of the steel casing pipe shall be by skilled workmen and in accordance with the best standard practice for steel pipe installation. Joints for steel casing pipe shall be butt welded.
 - 1. The boring equipment to be used for installing the jacked casing shall be of such size and capacity to allow the boring to proceed in a safe and expeditious manner. The installation of the casing and boring of the hole shall be done simultaneously to avoid cave-ins or settlement and for safety of traffic above.
 - 2. The CONTRACTOR shall check the vertical and horizontal alignment of the casing by survey instrument at least once during each four feet of advance, or as directed by the ENGINEER. Pits shall be well sheeted and braced as necessary for safe and adequate access for workmen, inspectors and materials and shall be of a size suitable to equipment and material handling requirements.
 - 3. Under no conditions shall jetting or wet boring of encasement under pavement be allowed.

4. After installation of the carrier pipe, each end of the casing pipe shall be made watertight with a brick masonry bulkhead. In addition, a Class B concrete cradle shall be provided from each end of the bulkhead to the first pipe joint outside of the bulkhead.

3.06 COPPER PIPE

- A. Installation of copper pipe shall be by skilled workman in accordance with the manufacturer's recommendations. Use teflon tape at all fittings unless otherwise required for intended service. Install unions at the connections to each piece of equipment to allow removal of equipment without dismantling connecting piping.
- B. Wall sleeves shall be provided for all piping passing through exterior walls and shall be of the same material as the piping to which it is joined. All wall sleeves shall be provided with an acceptable waterstop.
- C. The CONTRACTOR shall provide hot and cold water mains with branches and risers complete from point indicated on the Drawings running to all fixtures and other outlets indicated. Mains and branches shall be run generally as shown on the Drawings. The CONTRACTOR shall provide all interior water piping, branches, and risers as shown on the Drawing and shall make connections to all plumbing fixtures, hose bibs, wall hydrants, and other points requiring water under this and other Divisions of the Specifications.
- D. All water mains and branches shall be pitched at least one (1) inch in twenty-five (25) feet toward fixtures. The piping installation shall be arranged so that the entire system can be drained through fixture supply connections.
- E. Unions shall be installed at the connections to each piece of equipment to allow for removal of equipment without dismantling connecting piping.
- F. Joints 1-1/4 inches and larger shall be made with silver solder. For joints less than 1-1/4 inches and all valves (regardless of size) use 95/5 solder. Soldered joints shall be prepared with a non-corrosive paste flux in accordance with manufacturer's instructions. All joints shall be thoroughly cleaned with emery cloth and reamed out before assembly. Acid core solder will not be permitted.

3.07 JOINTS IN PIPING

- A. Restrained joints shall be provided on all pipe joints as specified herein and shown on the Drawings. Restrained joints shall be made up similar to that for push-on joints.
- B. Push-on joints include a single rubber gasket which fits into the bell end of the pipe. The gasket shall be wiped clean, flexed and then placed in the socket. Any bulges in the gasket which might interfere with the entry of the plain end of the pipe shall be removed. A thin film of lubricant shall be applied to the gasket surface which will come into contact with the spigot end of the pipe. The lubricant shall be furnished by the pipe manufacturer. The plain end of the pipe, which is tapered for ease of assembly, shall be wiped clean and a thick film of lubricant applied to the outside. The pipe shall be aligned and carefully entered into the socket until it just makes contact with the gasket. The joint assembly shall be completed by entering the pipe past the gasket until it makes contact with the bottom of the socket. The

pipe shall be pulled "home" with an approved jack assembly as recommended by the pipe manufacturer. If assembly is not accomplished by reasonable force, the plain end shall be removed and the condition corrected.

- C. Flanged joints shall be brought to exact alignment and all gaskets and bolts or studs inserted in their proper places. Bolts or studs shall be uniformly tightened around the joints. Where stud bolts are used, the bolts shall be uniformly centered in the connections and equal pressure applied to each nut on the stud. Pipes in all lines subject to temperature changes shall be cut short and cold sprung into place to compensate for expansion when hot.
- D. Mechanical joints shall be made up with gaskets, glands and bolts. When a joint is to be made up, the bell or socket and plain end shall be cleaned and washed with a solution of mild soap in water; the gland and gasket shall be slid onto the plain end and the end then entered into the socket until it is fully "home" on the centering ring. The gasket shall then be painted with soapy water and slid into position, followed by the gland. All bolts shall be inserted and made up hand tight and then tightened alternately to bring the gland into position evenly. Excessive tightening of the bolts shall be avoided. All nuts shall be pulled up using a torque wrench which will not permit unequal stresses in the bolts. Torque shall not exceed the recommendations of the manufacturer of the pipe and bolts for the various sizes. Care shall be taken to assure that the pipe remains fully "home" while the joint is being made. Joints shall conform to the applicable AWWA Specifications.
- E. Threaded and/or screwed joints shall have long tapered full depth threads to be made with the appropriate paste or jointing compound, depending on the type of fluid to be processed through the pipe. All pipe up to, and including 1-1/2-inches, shall be reamed to remove burr and stood on end and well pounded to remove scale and dirt. Wrenches on valves and fittings shall be applied directly over the joint being tightened. Not more than three pipe threads shall be exposed at each connection. Pipe, in all lines subject to temperature changes shall be cut short and cold sprung into place to compensate for expansion when hot. Joints in all piping used for chlorine gas lines shall be made up with a glycerine and litharge cement. Joints in plastic piping (PVC/CPVC) shall be laid and joints made with compounds recommended by the manufacturer. Installation shall conform to the requirements of ASTM D2774 and ASTM D2855. Unions required adjacent to valves and equipment.
- F. Soldered joints shall have the burrs removed and both the outside of pipe and the inside of fittings shall be thoroughly cleaned by proper tools recommended for that purpose. Flux shall be applied to both pipe and inside of fittings and the pipe placed into fittings and rotated to insure equal distribution of flux. Joints shall be heated and solder applied until it shows uniformly around the end of joints between fitting and pipe. All joints shall be allowed to self-cool to prevent the chilling of solder. Combination flux and solder paste manufactured by a reputable manufacturer is acceptable. Unions required adjacent to valves and equipment.
- G. Welded joints shall be made by competent operators in a first class workmanlike manner, in complete accordance with ANSI B31.1 and AWWA C206. Welding electrodes shall conform to ASTM A233, and welding rod shall conform to ASTM A251. Only skilled welders capable of meeting the qualification tests for the type of welding which they are performing shall be employed. Tests, if so required, shall be made at the expense of the CONTRACTOR, if so ordered by the ENGINEER. Unions shall be required adjacent to valves and equipment.

- H. Copper joints shall be thoroughly cleaned and the end of pipes uniformly flared by a suitable tool to the bevels of the fittings used. Wrenches shall be applied to the bodies of fittings where the joint is being made and in no case to a joint previously made. Dimensions of tubing and copper piping shall be in complete accordance with the fittings used. No flare joints shall be made on piping not suited for flare joints. Installations for propane gas shall be in accordance with NFPA 54 and/or 58.
- I. Solvent or adhesive welded joints in plastic piping shall be accomplished in strict accordance with the pipe manufacturer's recommendations, including necessary field cuttings, sanding of pipe ends, joint support during setting period, etc. Care shall be taken that no droppings or deposits of adhesive or material remain inside the assembled piping. Solvent or adhesive material shall be compatible with the pipe itself, being a product approved by the pipe manufacturer. Unions are required adjacent to valves and equipment. Sleeve-type expansion joints shall be supplied in exposed piping to permit 1-inch minimum of expansion per 100 feet of pipe length.
- J. Dielectric unions shall be installed wherever dissimilar metals are connected except for bronze or brass valves in ferrous piping. Unions shall be provided downstream of each valve with screwed connections. The CONTRACTOR shall provide screwed or flanged unions at each piece of equipment, where shown, and where necessary to install or dismantle piping.
- K. Eccentric reducers shall be installed where air or water pockets would otherwise occur in mains because of a reduction in pipe size.
- L. Joints in polypropylene and polyvinylidene fluoride pipe shall be butt fusion weld. All butt welding shall follow the requirements of ASTM D-2657 and the manufacturer's recommendations.

3.08 PAINTING AND COLOR CODING SYSTEM

- A. All exposed piping specified shall be color coded in accordance with the CITY's standard color designation system for pipe recognition and in accordance with Section 15030 – Piping and Equipment Identification Systems. In the absence of a standard color designation system, the ENGINEER will establish a standard color designation for each piping service category from color charts submitted by the CONTRACTOR in compliance with Section 09900 – Painting.
- B. All piping specified in this Section shall be painted in accordance with Section 09900 – Painting, except as follows:
 - 1. Copper pipe
 - 2. Stainless steel pipe. Flanges and supports or hangers shall be painted.

- END OF SECTION -

SECTION 15008 - SMALL PVC NON-PRESSURE PIPE

PART 1 -- GENERAL

1.01 THE REQUIREMENT

- A. The CONTRACTOR shall furnish and install all 4 to 15-inch underground PVC non-pressure pipe for manhole vents, gravity drain lines and all appurtenant work, complete in place, all in accordance with the requirements of the Contract Documents.

1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Excavation and Backfill for Utilities
- B. Piping, General

1.03 REFERENCE SPECIFICATIONS, CODES, AND STANDARDS

- A. Commercial Standards:

ASTM D 1784	Specification for Rigid Poly (Vinyl Chloride) (PVC) Compounds and Chlorinated Poly (Vinyl Chloride) (CPVC) Compounds.
ASTM D 2241	Specification for Poly (Vinyl Chloride) (PVC) Pressure-Rated Pipe (SDR-Series).
ASTM D 2321	Recommend Practice for Underground Installation of Flexible Thermoplastic Sewer Pipe.
ASTM D 3034	Specification for Type PSM Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings.

1.04 CONTRACTOR SUBMITTALS

- A. Samples: The CONTRACTOR shall submit to the ENGINEER for review, samples of all the materials proposed for use on the Work. The samples shall be clearly marked to show the manufacturer's name and product identification and shall be submitted along with the manufacturer's technical data and application instructions. All sample submittals shall conform to the requirements for Samples in Section entitled "Submittals."
- B. Shop Drawings: The CONTRACTOR shall submit shop drawings and laying diagrams of all pipe, joints, bends, special fittings, and piping appurtenances in accordance with Section entitled "Submittals."

PART 2 – PRODUCTS

2.01 GENERAL

- A. All PVC pipe shall be continuously and permanently marked with the manufacturer's name, pipe size, and pressure rating in psi.

- B. The CONTRACTOR shall also require the manufacturer to mark the date of extrusion on the pipe. This dating shall be done in conjunction with records to be held by the manufacturer for 2 years, covering quality control tests, raw material batch number, and other information deemed necessary by the manufacturer.

2.02 PIPE

- A. PVC pipe shall conform to ASTM D1785 and shall be made from a 12454B compound which is a Type 1, Grade 1 plastic as defined by ASTM D1784. Rerun or reclaimed materials will not be acceptable.
- B. Wall Thickness shall be a minimum of Schedule 80.

2.03 JOINTS

- A. All PVC pipe intended for buried service shall be socket weld joint.
- B. Socket type joints shall be made up in accordance with ASTM D2855 with a PVC solvent cement complying with ASTM D2564. The cement shall have a minimum viscosity of 2000 cps.

2.04 FITTINGS

- A. Socket type pipe fittings for schedule 80 pipe shall conform to ASTM D2467.
- B. Fittings shall have the same schedule designation, joint type and be made of the same PVC compound as the connecting pipe.

PART 3 – EXECUTION

3.01 GENERAL

- A. All material found during the progress to have defects will be rejected and the CONTRACTOR shall promptly remove such defective materials from the site of the Work.
- B. Installation shall conform to the requirements of ASTM D 2321 and to the supplementary requirements or modifications specified herein. Wherever the provisions of this Section and the requirements of ASTM D 2321 are in conflict, the more stringent provision shall apply.

3.02 BEDDING MATERIAL

- A. Unless otherwise specified or shown, all material used for pipe bedding shall conform to the requirements for "Embedment materials" as specified in ASTM D 2321.

3.03 TRENCHING AND BACKFILL

- A. Trench excavation and backfill shall conform to the requirements of the Section entitled "Excavation and Backfill for Utilities," and as specified herein.

- B. Unless Otherwise specified or shown, the maximum width of trenches shall be as specified in ASTM D 2321.
- C. The minimum depth of cover over the top of the pipe shall be 36-inches unless otherwise shown on the Drawings.

3.03 LAYING PIPE

- A. The pipe shall be installed in accordance with the requirements of ASTM D 2321 and as specified herein and shown and the sections shall be closely jointed to form a smooth flow line. Immediately before placing each section of pipe in final position for joining, the bedding for the pipe shall be checked for firmness and uniformity of surface.
- B. Proper implements, tools, and facilities as recommended by the pipe manufacturer's standard printed installation instructions shall be provided and used by the CONTRACTOR for safe and efficient execution of the Work. All pipe, fittings, valves, and accessories shall be carefully lowered into the trench by means of backhoe, ropes, or other suitable equipment in such a manner as to prevent damage to pipe and fittings. Under no circumstances shall pipe or accessories be dropped or dumped into the trench.
- C. Cutting and machining of the pipe shall be accomplished in accordance with the pipe manufacturer's standard procedures for this operation. Pipe shall not be cut with a cold chisel, standard iron pipe cutter, nor any other method that may fracture the pipe or produce ragged, uneven edges.
- D. The pipe and accessories shall be inspected for defects prior to lowering into the trench. Any defective, damaged or unsound pipe shall be repaired or replaced. All foreign matter or dirt shall be removed from the interior of the pipe before lowering into position in the trench. Pipe shall be kept clean during and after laying. All openings in the pipe line shall be closed with water tight expandable type sewer plugs or PVC test plugs at the end of each day's operation or whenever the pipe openings are left unattended. The use of burlap, wood, or other similar temporary plugs will not be permitted.
- E. Adequate protection and maintenance of all underground and surface utility structures, drains, sewers, and other obstructions encountered in the progress of the Work shall be furnished by the CONTRACTOR at its own expense under the direction of the ENGINEER.

3.04 HANDLING

- A. Handling of the PVC pipe shall be done with care to ensure that the pipe is not damaged in any manner during storage, transit, loading, unloading, and installation.
- B. Pipe shall be inspected both prior to and after installation in the ditch and all defective lengths shall be rejected and immediately removed from the working area.

3.05 FIELD JOINTING

- A. All pipe joints shall be made in accordance with the manufacturer's written instructions.
- B. The pipe shall not be deflected either vertically or horizontally in excess of the printed recommendations of the manufacturer of the coupling.

- C. When pipe laying is not in progress, the open ends of the pipe shall be closed to prevent trench water from entering pipe. Adequate backfill shall be deposited on pipe to prevent floating of pipe. Any pipe which has floated shall be removed from the trench, cleaned, and relaid in an acceptable manner. No pipe shall be laid when, in the opinion of the ENGINEER, the trench conditions or weather are unsuitable for such Work.

3.06 PROTECTIVE COATINGS (NOT USED)

- END OF SECTION -

SECTION 15020 - PIPE SUPPORTS

PART 1 -- GENERAL

1.01 THE REQUIREMENT

- A. Reference Section 05050, Metal Fastening.
- B. Reference Section 15000, Basic Mechanical Requirements.

PART 2 -- PRODUCTS

2.01 HANGERS AND SUPPORTS

- A. All piping shall be adequately supported and braced by means of adequate hangers, concrete piers, pipe supports, brackets, or otherwise as may be required by the location. Generally, concrete supports shall be used where pipe centerline is less than 3 feet above floor, and hangers above 6 feet unless specified or shown otherwise. Supports shall be not more than 10 feet on center for steel and cast iron, 4 feet on center for plastic unless otherwise shown on the Drawings or required by the specific manufacturer. All necessary inserts or appurtenances shall be furnished and installed in the concrete or structures for adequately securing hangers and supports to the structure.
- B. Hangers and supports shall conform to the following requirements:
 - 1. All hangers and supports shall be capable of adjustment after installation. Types of hangers and supports shall be kept to a minimum.
 - 2. Hanger rods shall be straight and vertical. Chain, wire, strap, or perforated bar hangers shall not be used. Hangers shall not be suspended from other piping.
 - 3. Vertical piping shall be supported at each floor and between floors by stays or braces to prevent rattling and vibration.
 - 4. Supports and hangers for plastic piping shall include wide saddles or bands as recommended by the manufacturer and approved by the ENGINEER to distribute load and thus avoid localized deformation of the pipe.
 - 5. Hanger and supports shall prevent contact between dissimilar metals by use of copper plated, rubber, vinyl coated or stainless steel hangers.
 - 6. Copper piping shall be supported by plastic coated or copper plated hangers and supports.
 - 7. Plastic piping shall be supported by plastic coated hangers and supports.
 - 8. Hangers and supports shall provide for thermal expansion throughout the full operating temperature range.

9. Expansion type anchors used for pipe hangers and supports shall be Type 304 stainless steel.
- C. All metallic hangers and supports shall be standard make by Anvil International, Inc., "Witch" by Carpenter & Paterson, Ltd., B-Line Systems, Inc., or equal; and data on the types and sizes to be used shall be furnished to the ENGINEER for approval. Metallic support system brackets, rods, support clips, clevis hangers, hardware, etc. Materials of construction shall be as identified in Table 15020-1.
- D. Non-metallic support system shall be a heavy duty channel framing system. Channel frames shall be manufactured by the pultrusion process using corrosion grade polyester or vinylester resins. All fiberglass construction shall include suitable ultraviolet inhibitors for UV exposure and shall have a flame spread rating of 25 or less per ASTM E84. Piping accessories, pipe clamps, clevis hangers, support posts, support racks, fasteners, etc., shall be constructed of vinylester or polyurethane resin. Non-metallic support systems shall be standard make Aickinstrut by Aickinstrut, Inc., Unistrut Fiberglass by Unistrut, Inc., Enduro Fiberglass Systems, or equal. The CONTRACTOR shall submit data on the types and sizes of approval. Unless otherwise shown or specified the CONTRACTOR shall provide support spacings in the conformance with the pipe and support system manufacturer's requirements.

**Table 15020-1
Metal Hanger and Support Materials of Construction**

Facility, Structure or Area	Required Material ⁽¹⁾	
	316 Stainless Steel	Hot Dip Galvanized Steel
Conflict Box	X	Not Used

(1) Refer to Specification Section 05010 – Metal Materials for grade requirements of steel for pipe supports.

PART 3 – EXECUTION

(NOT USED)

- END OF SECTION -

SECTION 15095 – VALVES, GENERAL

PART 1 -- GENERAL

1.01 THE REQUIREMENT

- A. The CONTRACTOR shall furnish and install, complete with all assemblies and accessories, all valves shown on the Drawings and specified herein including all fittings, appurtenances and transition pieces required for a complete and operable installation.
- B. The provisions of this Section shall apply to all valves and valve operators specified in the various Sections of these Specifications except where otherwise specified in the Contract Documents. Valves and operators in particular locations may require a combination of units, sensors, limit switches, and controls specified in other sections of these Specifications.

1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Section 09900 – Painting
- B. Section 11000 – Equipment General Provisions
- C. Section 15000 – Basic Mechanical Requirements

1.03 REFERENCE SPECIFICATIONS, CODES, AND STANDARDS

- A. Codes: All codes, as referenced herein, are specified in Section 01600, Reference Standards.

- B. Commercial Standards:

ASME B16.1	Cast Iron Pipe Flanges and Flanged Fittings, Class 25, 125, 250, and 800.
ANSI B16.5	Pipe Flanges and Flanged Fittings, Steel Nickel Alloy and Other Special Alloys.
ANSI/ASME B1.20.1	General Purpose Pipe Threads (Inch).
ANSI/ASME B31.1	Power Piping.
ASTM A 36	Specification for Structural Steel.
ASTM A 48	Specification for Gray Iron Castings.
ASTM A 126	Specification for Gray Iron Castings for Valves, Flanges, and Pipe Fittings.
ASTM A 536	Specification for Ductile Iron Castings.

ASTM B 61	Specification for Steam or Valve Bronze Castings.
ASTM B 62	Specification for Composition Bronze or Ounce Metal Castings.
ASTM B 148	Specification for Aluminum-Bronze Castings.
ASTM B 584	Specification for Copper Alloy Sand Castings for General Applications.
ANSI/AWWA C500	Metal-Seated Gate Valves for Water Supply Service.
ANSI/AWWA C504	Rubber-Seated Butterfly Valves.
AWWA C508	Swing-Check Valves for Waterworks Service, 2 Inches Through 24 Inches NPS.
ANSI/AWWA C509	Resilient-Seated Gate Valves for Water Service.
AWWA C550	Protective Interior Coatings for Valves and Hydrants.

1.04 CONTRACTOR SUBMITTALS

- A. Shop Drawings: Shop Drawings conforming to the requirements of Section 01300, Submittals, are required for all valves, and accessories. Submittals shall include all layout dimensions, size and materials of construction for all components, information on support and anchoring where necessary, pneumatic and hydraulic characteristics and complete descriptive information to demonstrate full compliance with the Documents. Shop Drawings for electrically operated/controlled valves shall include all details, notes, and diagrams which clearly identify required coordination with the electrical power supply and remote status and alarm indicating devices. Electrical control schematic diagrams shall be submitted with the Shop Drawings for all electrical controls. Diagrams shall be drawn using a ladder-type format in accordance with JIC standards. Shop Drawings for pneumatically operated/controlled valves shall include all details, notes, and diagrams which clearly identify required coordination with the compressed air (service air) system and electrical controls.
- B. Operation and Maintenance Manuals: Operation and maintenance manuals and installation instructions shall be submitted for all valves and accessories in accordance with the Specifications. The manufacturer(s) shall delete all information which does not apply to the equipment being furnished.
- C. Valve Labeling: The CONTRACTOR shall submit a schedule of valves to be labeled indicating in each case the valve location and the proposed wording for the label.

1.05 QUALITY ASSURANCE

- A. Valve Testing: Unless otherwise specified, each valve body shall be tested under a test pressure equal to twice its design water-working pressure.

- B. Bronze Parts: Unless otherwise specified, all interior bronze parts of valves shall conform to the requirements of ASTM B 62, or, where not subject to dezincification, to ASTM B 584.

PART 2 -- PRODUCTS

2.01 VALVES

- A. General: The CONTRACTOR shall furnish all valves, valve- operating units, stem extensions, and other accessories as shown or specified. All valves shall be new and of current manufacture. All shut-off valves, 6-inch and larger, shall have operators with position indicators. Where buried, these valves shall be provided with valve boxes and covers containing position indicators, and valve extensions. Shut-off valves mounted higher than 6-feet above working level shall be provided with chain operators. All valves shall have a minimum design pressure rating of 150 psi and capable of a test pressure of 300 psi. For service applications with pressures in excess of 150 psi, valves shall have a minimum pressure rating in excess of the service application working pressure.
- B. Materials: All valves shall be constructed of first quality materials which have strength, wearing, and corrosion resistance characteristics entirely suitable for the types of service for which the individual valves are designated. Cast iron parts of valves shall meet the requirements of ASTM A 126, "Standard Specifications for Grey Iron Castings for Valves, Flanges and Pipe Fittings, Class 'B'." All castings shall be clean and sound, without defects of any kind and no plugging, welding or repairing of defects will be permitted. Nonferrous alloys of various types shall be used for parts of valves as specified. Where no definite specification is given, the material shall be the recognized acceptable standard for that particular application.
- C. End Connections: Valves shall have flanged ends for exposed service and mechanical joint ends for buried service, unless otherwise shown on the Drawings or specified herein.
- D. All buried valves shall be provided with cast-iron valve boxes unless otherwise indicated. The boxes shall be asphalt varnished, or enameled cast iron, adjustable to grade, and installed perpendicularly, centered around and covering the upper portions of the valve or valve operator, or the pipe. The top of each valve box shall be placed flush with finish grade unless otherwise indicated on the Drawings. Valve boxes shall be as specified elsewhere in this section.
- E. All buried valves and other valves located below the concrete operating deck or level, specified or noted to be key operated, shall have an operator to finish grade or deck level, a 2-inch square AWWA operating nut, and cover or box and cover, as may be required.
- F. Valve Flanges: Flanged ends shall be flat-faced and have bolt circle and bolt patterns conforming to ANSI B16.1 Class 125 unless otherwise specified hereinafter. All bolt heads and nuts shall be hexagonal conforming to ANSI B18.2. Gaskets shall be full face and made of natural or synthetic elastomers in conformance with ANSI B16.21 suitable for the service characteristics, especially chemical compatibility and temperature.
- G. Gate Valve Stems: Where subject to dezincification, gate valve stems shall be of bronze to ASTM B 62, containing not more than 5 percent of zinc or more than 2 percent of aluminum. Where dezincification is not a problem, bronze to ASTM B 584 may be used.
For valve

stems with a minimum tensile strength of 60,000 psi, a minimum yield strength of 40,000 psi, and an elongation of at least 10 percent in 2 inches, as determined by a test coupon poured from the same ladle from which the valve stems to be furnished are poured.

- H. Protective Coating: Except where otherwise specified, ferrous surfaces, exclusive of stainless steel surfaces, in the water passages of all valves 4-inch and larger, as well as the exterior surfaces of all submerged valves, shall receive a fusion-bonded epoxy coating in accordance with AWWA C550. Flange faces of valves shall not be epoxy coated. The CONTRACTOR, through the valve manufacturer, shall certify in writing that such coating has been applied and tested in the manufacturing plant prior to shipment, in accordance with these Specifications.
- I. Valve Operators: Valves and gates shall be furnished with operators, provided by the valve or gate manufacturer. All operators of a given type shall be furnished by the same manufacturer. All valve operators, regardless of type, shall be installed, adjusted, and tested by the valve manufacturer at the manufacturing plant. Operator orientation shall be verified with the ENGINEER prior to installation. If this requirement is not met, changes to orientation shall be made at no additional cost.
- J. All operators, unless otherwise specified, shall turn counter- clockwise to open. Operators shall have the open direction clearly and permanently marked. All valve operators shall be provided with the valve by the valve manufacturer. The CONTRACTOR, through the valve manufacturer, shall be solely responsible for the selection of the proper operator to meet the operating conditions specified herein. Field calibration and testing of the operators and valves to ensure proper installation and operation shall be the responsibility of the CONTRACTOR.
- K. All manual operators shall have levers or handwheels, unless otherwise shown. Where buried, the valves shall have extensions with square nuts or floor stands. Valves mounted higher than 6 feet above floor or operating level shall have chain operators. Unless otherwise shown or specified, valves of sizes 4-inch and larger shall have gear-assisted operators.
- L. Operation of valves and gates shall be designed so that the effort required to operate the handwheel, lever or chain shall not exceed 40 pounds applied at the extremity of the wheel or lever. The handwheels on valves 14 inches and smaller shall not be less than 8 inches in diameter, and on valves larger than 14 inches the handwheel shall not be less than 12 inches in diameter.
- M. Chainwheel operator shall be fabricated of malleable iron and pocketed type chainwheels with chain guards and guides. Chainwheel operators shall be marked with an arrow and the word "OPEN" indicating direction to open. Indicators shall be provided at ground level. The operators shall have galvanized smooth welded link type chain. Chain that is crimped or has links with exposed ends shall not be acceptable.
- N. Floor Stands: Floor stands shall be cast iron, non-rising stem type with lockable hand wheel operator, valve position indicator and steel extension stem. Hand wheel shall be lockable in the full closed position. The floor stand shall be furnished with an armored padlock and six keys. Lock shall be as manufactured by Master, Schlage or equal. Floor stand shall be standard pattern type as manufactured by Clow Corporation, or equal.

- O. Valve Labeling: A label shall be provided on all shut-off valves exclusive of hose bibbs and chlorine cylinder valves. The label shall be of 1/16-inch bronze or stainless steel, minimum 2 inches by 4 inches in size, and shall be permanently attached to the valve or on the wall adjacent to the valve or as indicated by the ENGINEER.

2.02 VALVE BOXES

- A. The CONTRACTOR shall furnish and install valve boxes as shown on the Drawings and specified herein.
- B. All valve boxes shall be placed so as not to transmit shock or stress to the valve and shall be centered and plumb over the operating nut of the valve. The ground in the trench upon which the valve boxes rest shall be thoroughly compacted to prevent settlement. The boxes shall be fitted together securely and set so that the cover is flush with the finished grade of the adjacent surface. A concrete pad as detailed on the Drawings shall be provided around the valve box, sloped outwards.
- C. All valve boxes shall be 2-piece cast iron, sliding type, 5-1/4" shaft, with heavy duty traffic weight collar and the lid marked with the appropriate carrier product (i.e.: WATER). Boxes shall be as manufactured by Tyler Union, or equal.

PART 3 -- EXECUTION

3.01 VALVE INSTALLATION

- A. General: Before installation, all valves shall be lubricated, manually opened and closed to check their operation and the interior of the valves shall be thoroughly cleaned. Valves shall be placed in the positions shown on the Drawings.
- B. All valves, operating units, stem extensions, valve boxes, and accessories shall be installed in accordance with the manufacturer's written instructions and as shown and specified. Valves shall be firmly supported to avoid undue stresses on the pipe.
- B. Access: Install all valves so that operating handwheels or wrenches may be conveniently turned from operating floor but without interfering with access, and to avoid conflicts between valve operators and structural members or handrails. Unless otherwise approved, install all valves plumb and level. All valves shall be installed to provide easy access for operation, removal, and maintenance.
- C. Valve Accessories: Where combinations of valves, sensors, switches, and controls are specified or shown on the drawings, it shall be the responsibility of the CONTRACTOR to properly assemble and install these various items so that all systems are compatible and operating properly. The relationship between interrelated items shall be clearly noted on shop drawing submittals.
- D. Valve boxes shall be set plumb, and centered with the bodies directly over the valves so that traffic loads are not transmitted to the valve. Earth fill shall be carefully tamped around each valve box to a distance of 4 feet on all sides of the box, or to the undisturbed trench face, if less than 4 feet.

- E. All valves shall be tested at the operating pressures at which the particular line will be used. Any leakage or "sweating" of joints shall be stopped, and all joints shall be tight. All motor operated and cylinder operated valves shall be tested for control operation as directed by the ENGINEER.

- END OF SECTION -

SECTION 15100 – VALVE OPERATORS

PART 1 - GENERAL

1.01 THE REQUIREMENT

- A. Equipment shall be provided in accordance with the requirements of Section 15000 – Basic Mechanical Requirements.

1.02 WARRANTY AND GUARANTEE

- A. Warranty and Guarantee shall be as specified in Section 11000 - Equipment General Provisions with the exception that the warranty period shall be, as a minimum, for two (2) years from the date of shipment.

PART 2 -- PRODUCTS

2.01 GENERAL

- A. Manual operators shall be provided on all valves. Manual operator type shall be as specified herein and as shown on the Drawings.
- C. Quarter turn valves 6” and greater in size shall have geared operators. Gate valves 14” and greater in size shall have geared operators.
- D. Operators/actuators shall be furnished with conservatively sized extension bonnets, extension stems, or torque tubes, and all required appurtenances required for a complete installation. Operators furnished with extension bonnets shall include stainless steel extension stems, or stainless steel torque tubes.

2.02 MANUAL OPERATORS

- A. Unless otherwise specified or shown on the Drawings, manual operator type shall be as follows:
 - 1. Buried valves shall be equipped with nut operators, extended stems, and valve boxes. Where the depth of the operating nut is more than 4 feet below finish grade, a valve operator extension shall be provided to bring the operating nut to within 18-24 inches of the surface.
 - 2. Exposed valves up to 4-inch shall be lever operated (except gate valves).
 - 3. Exposed valves 6-inches and larger shall be handwheel operated.
 - 4. Exposed gate valves shall be handwheel operated.

5. Valves with centerline of operator located more than 6-feet above the floor or platform from which it is to be operated shall have a chainwheel operator unless otherwise indicated on the Drawings.
- B. Manual operators shall be rigidly attached to the valve body unless otherwise specified or shown on the Drawings.
- C. All operators shall turn counter-clockwise to open and shall have the open direction clearly and permanently marked.
- D. Valve operators shall be designed so that the force required to operate the handwheel, lever, or chain (including breakaway torque requirements) does not exceed 80 pounds applied at the extremity of handwheel or chainwheel operator. Design pressures for sizing of valve operators shall be the piping test pressure for the piping in which the valve is to be installed as shown in the Piping Schedule in Section 15390 – Schedules.
- E. Handwheels for valves operators shall not be less than 12 inches in diameter. The maximum diameter of any handwheel shall not exceed 24”.
- F. Nut operators shall have standard 2-inch square AWWA operating nuts designed in accordance with AWWA C504-94.
- G. Geared manual operators shall be of the worm gear, traveling nut or scotch yolk type except manual operators for butterfly valves 18-inch in diameter or larger which shall be worm gear, unless otherwise indicated in the individual valve specification. Gear operators shall be of the worm gear or bevel gear type. Gear box designs incorporating end of travel stops in the housing shall be equipped with AWWA input stops. Each gearbox shall require a minimum of 10 turns for 90 degree rotation or full valve stem travel and shall be equipped with a mechanical valve position indicator.
- H. Manual operators on below grade (and vault installed) valves shall be permanently lubricated and watertight under an external water pressure of 10 psi.

2.03 ELECTRIC VALVE ACTUATORS

(NOT USED)

PART 3 -- EXECUTION

3.01 FIELD TESTS

- A. Field testing shall be in accordance with the following additional requirements:
 1. Valve actuators shall be field-tested together with the associated valves.
 2. Test all valves at the operating pressures at which the particular line will be used.

- END OF SECTION -

SECTION 15108 – GATE VALVES

PART 1 -- GENERAL

1.01 THE REQUIREMENT

- A. The CONTRACTOR shall furnish and install gate valves, complete and operable as shown and specified herein, including operators, epoxy coating, accessories and appurtenant work, all in accordance with the requirements of the Contract Documents.

1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Section 15100 – Valves and Appurtenance.

1.03 REFERENCE SPECIFICATIONS, CODES AND STANDARDS

- A. ASME/ANSI B16.1 Cast Iron Pipe Flanges and Flanged Fittings
- B. AWWA C500 Metal-Seated Gate Valves for Water Supply Service
- C. AWWA C509 Resilient-Seated Gate Valves for Water-Supply Service
- D. ANSI/NSF 61 Drinking Water System Components – Health Effects
- E. AWWA C550 Protective Epoxy Interior Coating for Valves and Hydrants

PART 2 -- PRODUCTS

2.01 GENERAL

- A. All buried valves shall be of the inside screw, non-rising stem type.
- B. Valves shall be capable of being repacked under line pressure.
- C. Valves 14 inches and larger shall be equipped with AWWA non-rising stem. When installed with horizontal stem in horizontal pipes, they shall be fitted with bronze slides, tracks, rollers and scrappers to assist the travel of the gate assembly. When installed in vertical pipes, they shall be fitted with a shoe on each side of the disc assembly to guide the disc assembly throughout its range of travel.
- D. All valves above ground shall be outside screw and yoke (OS&Y) type.
- E. Gate valves intended for underground service shall use 316 stainless steel external fasteners instead of standard steel fasteners.

2.02 METAL-SEATED GATE VALVES (3-INCH AND LARGER)

- A. Double-Disc Type: Metal-seated gate valves for water service shall conform to ANSI/AWWA C500. Valves shall be of the double-disc type with non-rising stem, opening counter-clockwise, and provided with a 2-inch square operating nut or handwheel, as shown on the Drawings. Valves shall have flanged or mechanical joint ends, to match pipe.
- B. Suppliers, or Equal:
 - 1. American-Darling Valve Co.
 - 2. Clow Corporation
 - 3. M&H Valve Company
 - 4. Mueller Company

2.03 RESILIENT-SEATED GATE VALVES

- A. Resilient-seated gate valves conforming to ANSI/AWWA C509 may be provided, in lieu of metal-seated double disc gate valves. Resilient-seated gate valves shall have cast iron bodies with flanged, bell, or mechanical joint ends, rubber-coated cast iron disc, flanged bonnet, bronze stem, o-ring seals, and operators with handwheel or square nut, unless otherwise shown.
- B. Suppliers, or Equal:
 - 1. American-Darling Valve Co.
 - 2. Clow Corporation
 - 3. M&H Valve Company
 - 4. Mueller Company

PART 3 -- EXECUTION

3.01 INSTALLATION

- A. All gate valves shall be installed in accordance with AWWA Standards and the Supplier's printed recommendations, and in accordance with the applicable provisions of Section entitled "Valves, General".

3.02 PROTECTIVE COATINGS

- A. Exterior Coatings for Aboveground Service: Valve exterior shall be factory coated with a red phenolic primer paint. Primer shall be suitable for contact with potable water and shall meet the requirements of ANSI/NSF Standard 61: Drinking Water System Components. Primer shall be compatible with the finish coating specified in Section 09900 – Painting.

- B. Exterior Coatings for Underground Service: Exterior ferrous surfaces of valves that will be in contact with water shall receive a thermosetting epoxy coating conforming to AWWA C550. Coating shall be suitable for contact with potable water and shall meet the requirements of ANSI/NSF Standard 61: Drinking Water System Components. Coating shall be compatible with the finish coating specified in Section 09900 – Painting.

- C. Interior Coating for Aboveground or Underground Service: Interior ferrous surfaces of valves that will be in contact with water shall receive a thermosetting epoxy coating conforming to AWWA C550. Coating shall be suitable for contact with potable water and shall meet the requirements of ANSI/NSF Standard 61: Drinking Water System Components.

- END OF SECTION -

SECTION 15114 - MISCELLANEOUS VALVES AND APPURTENANCES

PART 1 -- GENERAL

1.01 THE REQUIREMENT

- A. Reference Section 15000, Basic Mechanical Requirements.

PART 2 -- PRODUCTS

2.01 GATE VALVES (SMALLER THAN 4-INCH)

- A. Gate valves, smaller than 4-inch, for general purpose use shall be heavy duty type for industrial service, with screwed or soldered ends to suit piping. The bodies shall have screwed tops or union bonnets, of bronze to ASTM B 62, with bronze stems, solid wedges, metal handwheels, and Teflon-impregnated or other acceptable packing. Buried valves shall have non-rising stems. Exposed valves (above ground) shall have rising stems. All valves shall have a minimum pressure rating of 125 psi.
- B. Suppliers, or Equal:
 - 1. Crane Company;
 - 2. Milwaukee Valve Company;
 - 3. Wm. Powell Company.

2.02 SERVICE SADDLES

- A. Service pipe saddle shall fit to the maximum O.D. of the saddle's range, and extend a minimum of 160 degrees around the pipe. When the saddle is used on pipe to the minimum pipe size of the range, the saddle shall extend 180 degrees around the pipe. Straps shall have ends chamfered and be provided with Class 2 fit, National Coarse Threads. Saddle casting shall be ductile iron, double strap and shall have asphaltic coating. Straps shall be stainless steel. Valve gaskets shall be self sealing, neoprene.

2.03 CORPORATION STOPS

- A. Corporation stops shall be provided with all service saddle connections. Corporation stops shall be O-ring sealed, balance pressure, plug type valves having a full open unobstructed flow way. Corporation stops shall have threaded inlet and outlet connections unless otherwise indicated and shall be suitable for buried service where required. Corporation stops shall be manufactured of brass alloys containing less than 0.25% lead.
- B. The suppliers shall be the following or equal:
 - 1. Ford Meter Box Company;

2. James Jones Company;
3. Mueller Company.

2.03 SOLENOID VALVES

- A. Three-way two-position solenoid valves shall be of the two coil type. Both coils shall be normally closed and each shall open independently when energized. The valve shall be of forged brass-body and bonnet with a Buna "N" diaphragm and screwed ends. The solenoid's internal parts shall be of 300 and 400 series stainless steel. The valve shall have a safe body working pressure of 125 psi and shall be as manufactured by ASCO Valves, Automatic Switch Co., or equal, for 120V, 60 Hz, single phase operation. Solenoid enclosure shall be NEMA 4 watertight.
- B. Two-way solenoid valves shall be normally closed and shall open when the solenoid is energized, unless otherwise noted. The valve shall be of forged brass-body and bonnet with a BUNA "N" diaphragm and screwed ends. The solenoid's internal parts shall be of 300 and 400 series stainless steel. The valve shall have a safe body working pressure of 125 psi, and shall be as manufactured by ASCO Valves, Automatic Switch Co., or equal, for 120 volt, 60 Hz, single phase operation. Solenoid enclosure shall be NEMA 4 watertight.
- C. Four-way two-position solenoid valves shall be of the single coil type and shall be normally closed and shall open when the solenoid is energized (i.e. fail closed). The remainder of the four-way two-position solenoid valves shall be of the two coil type. Both coils shall be normally closed and each shall open independently when energized. The valve shall be of forged brass-body and bonnet with a Buna "N" diaphragm and screwed ends. The solenoid's internal parts shall be of 300 and 400 series stainless steel. The valve shall have a safe body working pressure of 125 psi and shall be as manufactured by ASCO Valves, Automatic Switch Co. or equal, for 120V, 60 Hz, single phase operation. Solenoid enclosure shall be NEMA 4 watertight. The solenoid valve shall be provided with a manual override.

2.02 SEWAGE AIR RELEASE VALVES

- A. The Contractor shall furnish and install sewage air release valves where indicated on the Drawings and specified herein. Air release valves for sewage shall have elongated, cylindrical chambers designed to release entrained air and sewage gases through an air release orifice. The air release valve float shall withstand an external pressure of 500 psi without collapsing.
- B. After entraining air escapes through the orifice, the orifice shall be closed by a needle on a compound lever mechanism to prevent the escape of sewage. The orifice shall remain closed until more gas accumulates and the cycle automatically repeats. The valve shall seat to prevent sewage from leaking through the valve at any pressure. Valves shall have an operating pressure of at least 150 psi.
- C. Air release valves shall be provided with a ½" diameter orifice and each valve shall be provided with an isolation valve, quick disconnect coupling and valve for back flushing, and a blow off outlet and valve at the bottom of the chamber.
- D. Materials of construction shall be as follows:

- | | |
|-------------------------------|--|
| 1. Body | Cast Iron: ASTM A 126 Grade B or
Ductile Iron: ASTMA536 |
| 2. Internal Linkage and Float | Stainless Steel: Type 316 |
| 3. Needle | Buna-N |
- E. Sewage air release valves shall have inlets of the type and diameter as shown on the Drawings. If not identified, sewage air release valves shall be provided with a 2-inch (minimum) threaded connection.
- F. All internal and external ferrous components and surfaces of the valves, with the exception of stainless steel and finished or bearing surfaces, shall be shop painted with two coats (10 mils min. dry film thickness) of the manufacturer's premium (NSF approved) epoxy for corrosion resistance. Damaged surfaces shall be repaired in accordance with the manufacturer's recommendations.
- G. Sewage air release valves shall be APCO Series 450 or equivalent as manufactured by ARI, Crispin (S Series), Val-Matic (49A.4 – 49A.6), or equal.

2.03 NEEDLE VALVES

- A. Needle valves shall be bronze body and spindle with follower gland and shall be 400 psi, non-shock cold water needle valves, Figure 743-G as manufactured by Jenkins Bros., Corp., Crane Co. No. 88, or equal.
- B. Needle valves (service air) shall be bronze body, with stainless steel stem. Valves shall be Jenkins Valve Fig. 741G, Crane Co. or equal and shall have minimum 400 psi non-shock cold water pressure rating and screwed ends.

PART 3 – EXECUTION

3.01 INSTALLATION

- A. All valves shall be installed in accordance with the manufacturer's printed recommendations and the requirements of Section entitled "Valves, General".

- END OF SECTION -

DIVISION 16 – ELECTRICAL

NOT USED

DIVISION 17 – INSTRUMENTATION

NOT USED

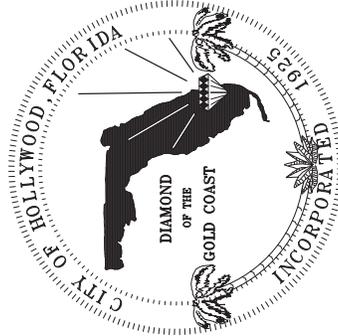
CITY OF HOLLYWOOD

SOUTHERN REGIONAL WASTEWATER

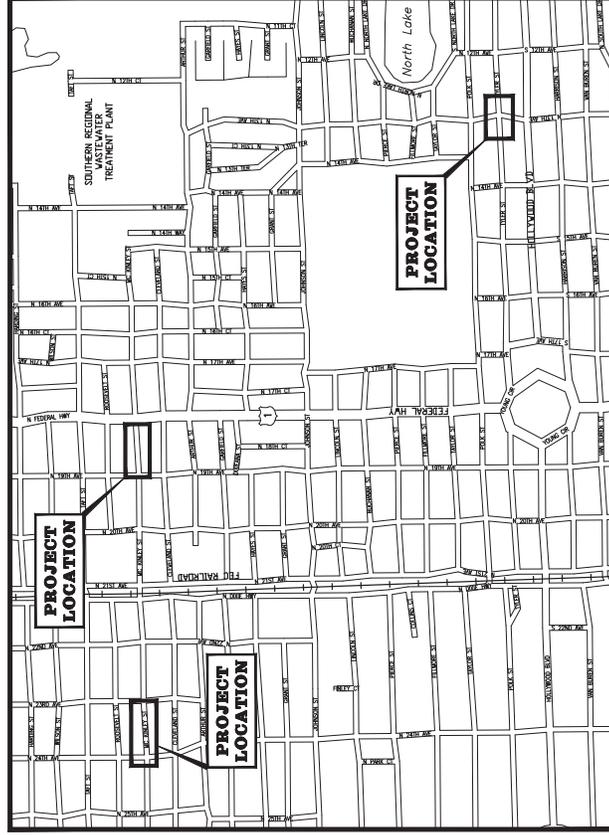
COLLECTION SYSTEM

**McKINLEY STREET INTERCEPTOR VENTILATION &
TYLER STREET CONFLICT BOX REVISION**
CITY PROJECT No. 7111

**BID SET
MARCH 2023**



Hazen
HAZEN AND SANVER
4000 HOLLYWOOD BLVD, SUITE 750N
HOLLYWOOD, FLORIDA 33021
Certificate of Authorization No. 2771



LOCATION MAP

NIS

CITY COMMISSION

- Josh Levy, Mayor**
- Caryl S. Shuham, Commissioner**
- Linda Hill Anderson, Commissioner**
- Traci L. Callari, Commissioner**
- Adam Gruber, Commissioner**
- Kevin D. Biederman, Commissioner**
- Idelma Quintana, Commissioner**
- Vin Morello, Director of Public Utilities**

DWG	DESCRIPTION
G-01	COVER SHEET AND LOCATION MAP
C-01	KEY PLAN
C-02	ENLARGED PLANS
C-03	MANHOLE VENT DETAILS
C-04	CONFLICT BOX DETAILS
C-05	GENERAL NOTES

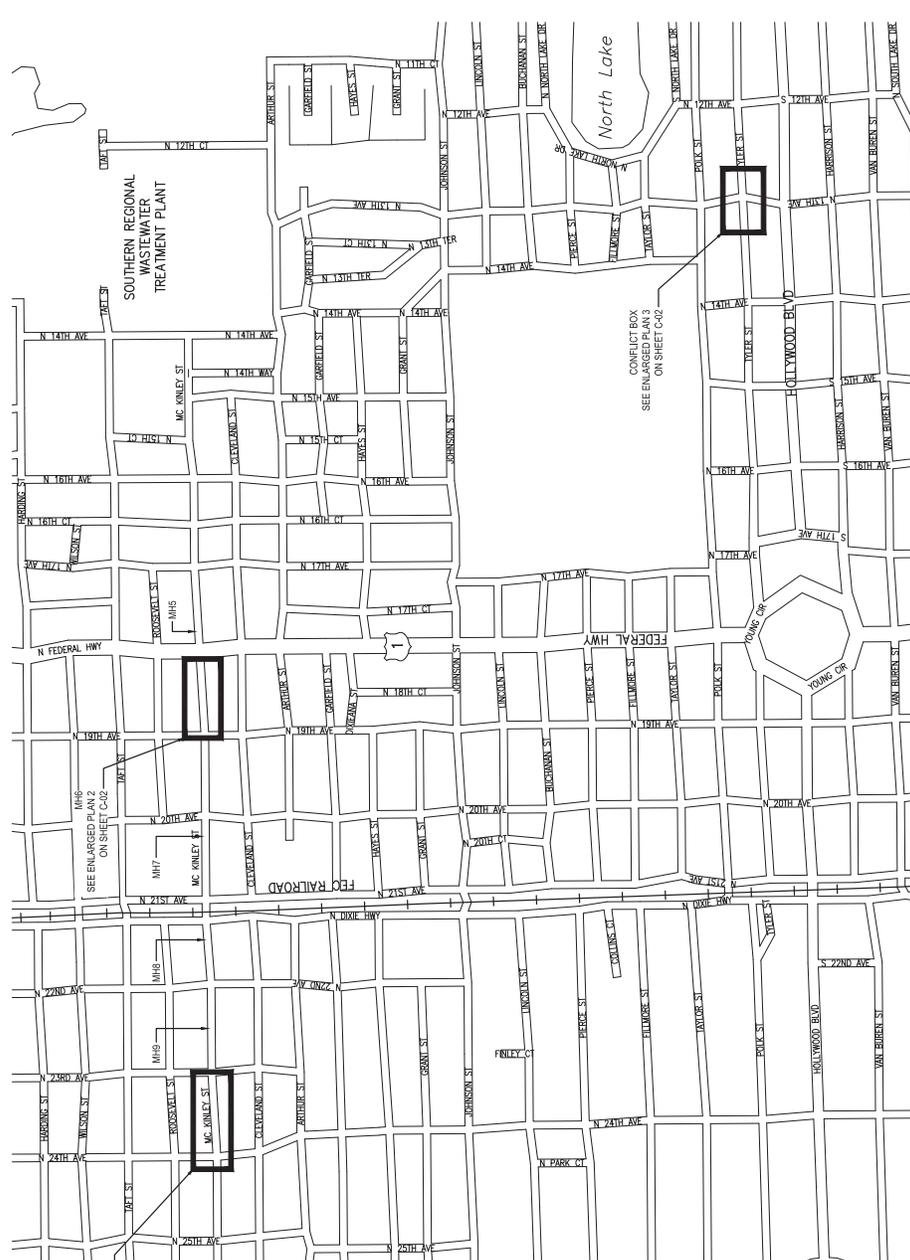
COVER SHEET AND LOCATION MAP

Sheet 1 of 6
Drawing G-1

J. PHILIP COOME
No. 47137 P.E.

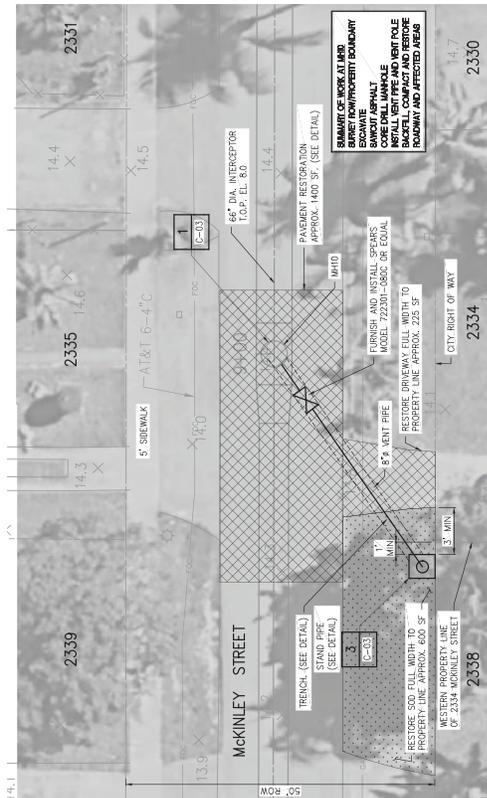
WORK REQUIREMENTS:

1. THE CONTRACTOR SHALL PROVIDE AND INSTALL VENTILATION PIPING TO WORKLEY STREET MANHOLES AND TO AVOIDER CONDUIT BOX AND PERFORM OTHER NECESSARY WORK AS SHOWN HEREON.
2. THE CONTRACTOR SHALL TEST FOR HYDROGEN SULFIDE GAS AND METHANE GAS AND TEST WITH SODIUM FLOW HIGH LEVELS OF HYDROGEN SULFIDE GAS PRESENT. WORKER SAFETY AND TESTING AND MITIGATION OF TOXIC GASES DURING THE WORK ARE THE RESPONSIBILITY OF THE CONTRACTOR.
3. THE CONTRACTOR ACKNOWLEDGES THAT HE HAS INVESTIGATED THE SITE PRIOR TO PREPARING A PRICE PROPOSAL AND HAS SATISFIED HIMSELF AS TO THE NATURE, LOCATION AND CONDITIONS AFFECTING CHARACTER, QUALITY AND QUANTITY OF SURFACE AND SUBSURFACE MATERIALS OR OBSTACLES TO BE ENCOUNTERED INSOFAR AS THIS INFORMATION IS REASONABLY ASCERTAINABLE FROM INSPECTION OF THE SITE OR ANY OTHER INFORMATION MADE AVAILABLE UPON REQUEST.
4. ALL WORK SHALL BE PERFORMED IN SUCH A MANNER TO PROTECT ALL PERSONNEL, WORKMAN, PEDESTRIANS, AND ADJACENT PROPERTY, AND STRUCTURES FROM POSSIBLE INJURY OR DAMAGE.
5. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL ADJACENT PROPERTIES AND TO ALL PUBLIC UTILITIES AND SHALL MINIMIZE IMPACTS TO PRIVATE BUSINESSES, SCHOOLS, AND PUBLIC UTILITIES.
6. EXISTING UTILITIES SHOWN ON THESE PLANS AND THE CONTRACTORS PRIOR TO EXCAVATION SHALL BE PROTECTED FROM DAMAGE DURING EXCAVATION AND BACKFILLING ACTIVITIES.
7. IN THE EVENT UTILITIES NOT SHOWN OR MADE KNOWN TO THE CONTRACTOR PRIOR TO EXCAVATION ARE DAMAGED, A WRITTEN REPORT SHALL BE MADE IMMEDIATELY TO THE CITY.
8. THE LOCATION AND EXTENT OF UNDERGROUNDS AND COVERED FACILITIES ARE NOT GUARANTEED AND THE CONTRACTOR IS CAUTIONED TO PROCEED WITH CARE IN ORDER TO PREVENT THE UNDERMINS OR DAMAGE TO EXISTING STRUCTURES, PIPES, OR FACILITIES.
9. THE WORK SHALL BE PERFORMED IN A NEAT AND WORKMANLIKE MANNER IN THE LOCATIONS AND TO THE ELEVATIONS SHOWN.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING, ALIGNING, AND LEVELING ALL EXCAVATION AND BACKFILLING.
11. THE CONTRACTOR SHALL PROVIDE GAS UTILITIES AND SERVICES FOR HIS OWN OPERATIONS INCLUDING POWER, WATER, VENTILATION, SANITARY FACILITIES AND COMMUNICATIONS.
12. THE CONTRACTOR SHALL PREPARE BIDDING AND RESTORATION AT THE CONCLUSION OF EACH WORK DAY AND LEAVE THE SITE IN A SAFE AND SECURE CONDITION.
13. THE CONTRACTOR SHALL OBEY ALL TRAFFIC LAWS AND PROVIDE MAINTENANCE OF TRAFFIC IN COMPLIANCE WITH THE REQUIREMENTS, RULES AND REGULATIONS OF FDOT, BROWARD COUNTY AND THE CITY.

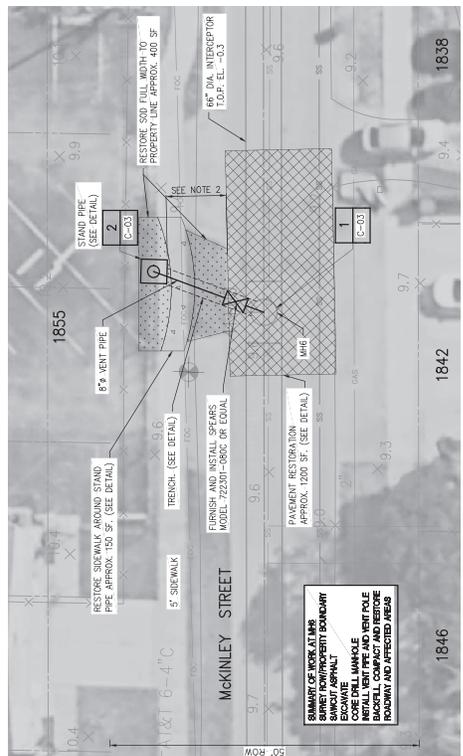


PLAN
NOT TO SCALE

		DATE: MARCH 2023 SHEET: 2 of 6 DRAWING: C-01	
SOUTHERN REGIONAL WASTEWATER COLLECTION SYSTEM MC KINLEY STREET INTERCEPT VENTILATION & TYLER STREET CONFLICT BOX REVISION			
KEY PLAN			
CONTRACT: 7111 CLIENTS PROJECT: 4321-016 ENGINEERS PROJECT: 4321-016-001 CAD REFERENCE: 4321-016-001		SCALE: NTS	
 HAZEN AND SAWYER 4000 HOLLYWOOD BLVD, SUITE 750N HOLLYWOOD, FL 33021 Certificate of Authorization No: 2771			
DESIGNED: NL DRAWN: MN CHECKED: JAM IN CHARGE: JPC		J. PHILIP COOKE No. 47137 P.E.	
BIDDING: JPC REVIEW SUBMITTAL: JPC PREP. DWG.: JPC		05/07/2023 09/29/2022	

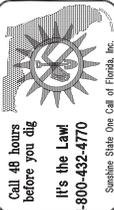


MH10 ENLARGED PLAN 1
1"=20'-0"

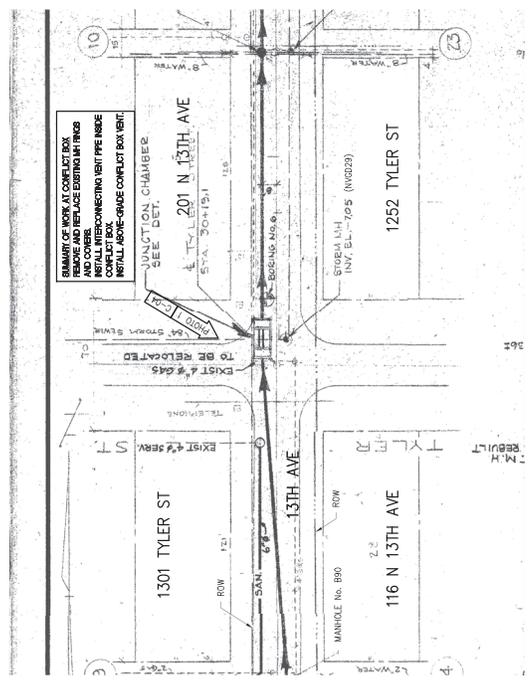


MH6 ENLARGED PLAN 2
1"=20'-0"

ALL EXISTING UTILITIES SHOWN ON THESE PLANS ARE TO BE CONSIDERED APPROXIMATE & SHOULD BE VERIFIED BY THE CONTRACTOR PRIOR TO THE START OF WORK OPERATIONS



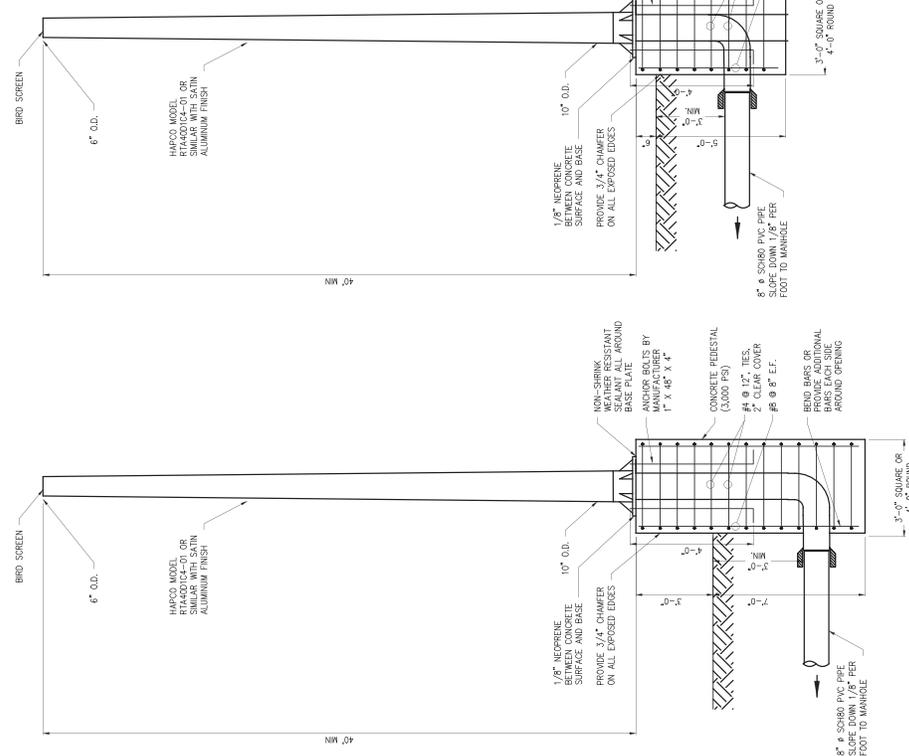
- NOTES:
- EXISTING ELEVATIONS SHOWN ARE NAVD88 UNLESS OTHERWISE SHOWN.
 - STAND PIPE BASE TO BE OFFSET 6" MIN FROM EDGE OF PAVEMENT



CONFLICT BOX ENLARGED PLAN 3
NOT TO SCALE



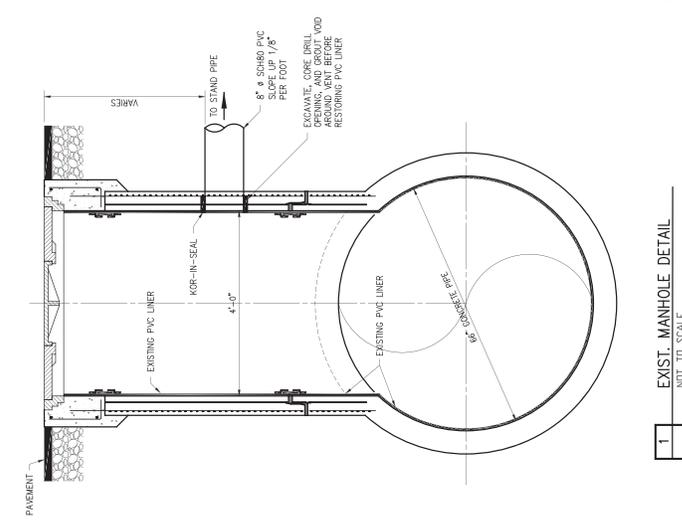
DESIGNED	NL	DATE	MARCH 2023
DRAWN	MN	SHEET	3 OF 6
CHECKED	JMM	DRAWING	C-02
BOUNDED	JPC	SOUTHERN REGIONAL WASTEWATER COLLECTION SYSTEM MCKINLEY STREET INTERCEPTOR VENTILATION & TYLER STREET CONFLICT BOX RENOVATION	
REVIEW SUBMITTAL	JPC	CITY OF HOLLYWOOD	
REVIEW SUBMITTAL	JPC	ENLARGED PLANS	
DATE	05/01/2023	CONTRACT	7111
DATE	09/29/2022	CLIENT'S PROJECT	6321-016
		ENGINEER'S PROJECT	4321-016-001
		CAD REFERENCE	4321-016-001
		SCALE	NTS
		Hazen HAZEN AND SAWYER 4000 HOLLYWOOD BLVD, SUITE 750N HOLLYWOOD, FL 33021 Certificate of Authorization No. 2771	
			P.E.
			No. 47137



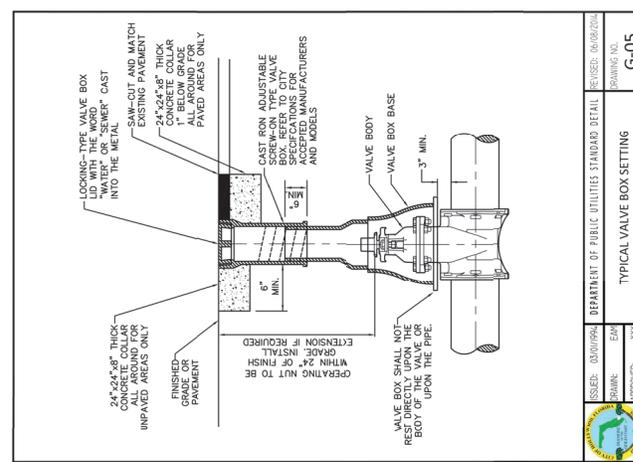
1 TYPE 1 STAND PIPE SUPPORT NOT TO SCALE

2 TYPE 2 STAND PIPE SUPPORT NOT TO SCALE

3 TYPE 2 STAND PIPE SUPPORT NOT TO SCALE



1 EXIST. MANHOLE DETAIL NOT TO SCALE

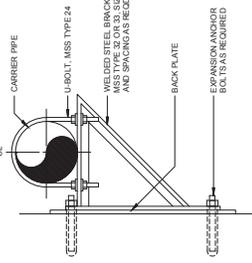


TYPICAL VALVE BOX SETTING
 SHEET: 04/09/2024 DEPARTMENT OF PUBLIC UTILITIES STANDARD DETAIL REVISION: 04/09/2024
 DRAWN: JPC
 CHECKED: JPC
 APPROVED: JPC
 G-05

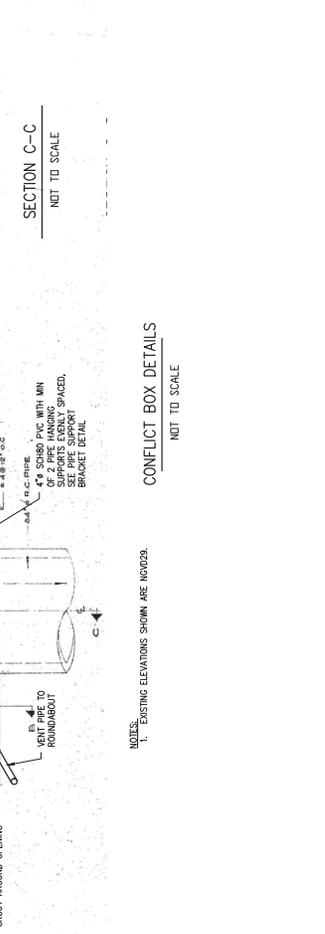
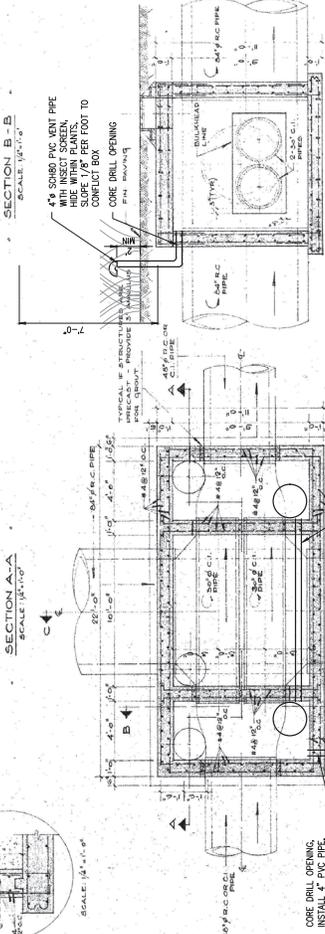
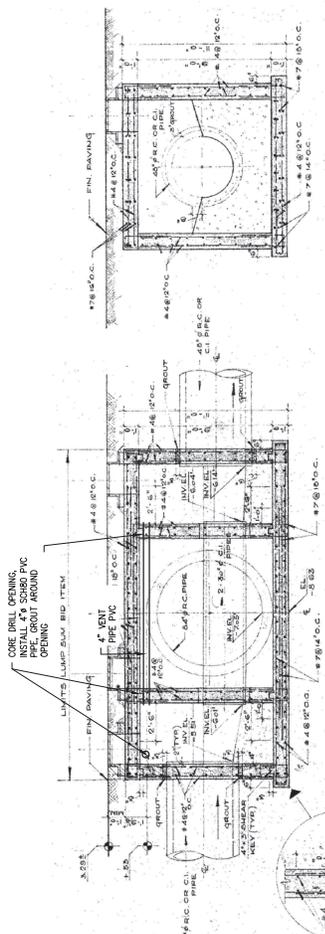
CONTRACT: _____ CLIENTS PROJECT: 7111 ENGINEERS PROJECT: 4321-016 CAD REFERENCE: 4321-016-001		SCALE: NTS		Hazen HAZEN AND SAWYER 4000 HOLLYWOOD BLVD, SUITE 750N HOLLYWOOD, FL 33021 Certificate of Authorization No. 2771		CITY OF HOLLYWOOD 		SOUTHERN REGIONAL WASTEWATER COLLECTION SYSTEM HAWKLEY STREET INTERCEPTOR VENTILATION & TYLER STREET CONJECT BOX REVISION		DATE: MARCH 2023 SHEET: 4 OF 6 DRAWING: C-03
CONTRACT: _____ CLIENTS PROJECT: 7111 ENGINEERS PROJECT: 4321-016 CAD REFERENCE: 4321-016-001		SCALE: NTS		Hazen HAZEN AND SAWYER 4000 HOLLYWOOD BLVD, SUITE 750N HOLLYWOOD, FL 33021 Certificate of Authorization No. 2771		CITY OF HOLLYWOOD 		SOUTHERN REGIONAL WASTEWATER COLLECTION SYSTEM HAWKLEY STREET INTERCEPTOR VENTILATION & TYLER STREET CONJECT BOX REVISION		DATE: MARCH 2023 SHEET: 4 OF 6 DRAWING: C-03



PHOTO 1
NOT TO SCALE



PIPE SUPPORT BRACKET
M-40-0303



CONFLICT BOX DETAILS
NOT TO SCALE

NOTES:
1. EXISTING ELEVATIONS SHOWN ARE IN 029.

DATE:	MARCH 2023
SHEET:	5 of 6
DRAWING:	C-04

SOUTHERN REGIONAL WASTEWATER COLLECTION SYSTEM
HAWKLEY STREET INTERCEPTOR VENTILATION &
TYLER STREET CONFLICT BOX REVISION
CONFLICT BOX DETAILS



CONTRACT:	-
CLIENT'S PROJECT:	7111
ENGINEERS PROJECT:	4321-016
CAD REFERENCE:	4321-016-001

SCALE: NTS

Hazen
HAZEN AND SAWYER
4000 HOLLYWOOD BLVD., SUITE 750N
CITY OF HOLLYWOOD, CA 91607
Certificate of Authorization No: 2771

DESIGNED:	NL
DRAWN:	MI
CHECKED:	JMM
PROJ. ENGR.:	JPC
ISSUED FOR:	BT

NO.	DATE	DESCRIPTION
1	03/07/2023	ISSUED FOR
1	09/29/2022	REVIEW SUBMITTAL
1	09/29/2022	ISSUED FOR

8829-1, 1804-A32-007B

